



**FOREIGN
BROADCAST
INFORMATION
SERVICE**

JPRS Report

Soviet Union

Economic Affairs

19980123 120

DTIC QUALITY INSPECTED 3

DISTRIBUTION STATEMENT A

Approved for public release;
Distribution Unlimited

REPRODUCED BY
U.S. DEPARTMENT OF COMMERCE
NATIONAL TECHNICAL INFORMATION SERVICE
SPRINGFIELD, VA. 22161

Soviet Union

Economic Affairs

JPRS-UEA-89-033

CONTENTS

16 OCTOBER 1989

NATIONAL ECONOMY

ECONOMIC POLICY, ORGANIZATION, MANAGEMENT

Draft Law on Leasing Published	1
Text of Bill [EKONOMICHESKAYA GAZETA No 36, Sep 89]	1
Maleyev Commentary [V. Maleyev; EKONOMICHESKAYA GAZETA No 38, Sep 89]	6
Amendments to Law on Cooperatives Suggested	
[Ye. Sosnin; PRAVITELSTVENNYY VESTNIK No 19, Sep 89]	8
Deputy Chairman Notes Reform Commission's Tasks, Responsibilities	
[P.M. Katsura; PRAVITELSTVENNYY VESTNIK No 16, Aug 89]	11

INVESTMENT, PRICES, BUDGET, FINANCE

Aganbegyan Suggests 'Cure' for Monetary Overhang	
[A. Aganbegyan; PRAVITELSTVENNYY VESTNIK No 18, Sep 89]	15

INDUSTRIAL DEVELOPMENT, PERFORMANCE

New Industrial Concerns Attract Press Attention	17
'Tekhnokhim' Concern Described [LENINGRADSKAYA PRAVDA, 8 Aug 89]	17
'Tekhnokhim's' First Year Assessed	
[B. Gidasov, A. Burman; PRAVITELSTVENNYY VESTNIK No 16, Aug 89]	17
Party's Role in Concerns Questioned	
[M. Rostarchuk; SOTSIALISTICHESKAYA INDUSTRIYA, 3 Sep 89]	19
Gas Industry Concern Founded	
[V. Yurteyev; PRAVITELSTVENNYY VESTNIK No 17, Aug 89]	22

REGIONAL DEVELOPMENT

Methods of Calculating Regional Economic Differences Disputed	22
National Income Analyzed by Region	
[B. Plyshevskiy; EKONOMICHESKAYA GAZETA No 34, Aug 89]	22
More Indicators Needed	
[B. Plyshevskiy, EKONOMICHESKAYA GAZETA No 35, Aug 89]	25

AGRICULTURE

AGRO-ECONOMICS, POLICY, ORGANIZATION

State Commission for Food, Procurement Profiled	
[PRAVITELSTVENNYY VESTNIK No 17, Aug 89]	29
New Agrochemical Association Formed	
[Ye. Osinin; PRAVITELSTVENNYY VESTNIK No 17, Aug 89]	30

CONSTRUCTION

POLICY, ORGANIZATION

Improvements Needed in Construction Time, Efficiency	
[S. A. Chernetsov; FINANSY SSSR No 7, Jul 89]	33

BUILDING MATERIALS

- Building Materials Minister Discusses Restructuring
[S. Voyenushkin; SOTSIALISTICHESKAYA INDUSTRIYA, 21 Apr 89] 36

CONSUMER GOODS, DOMESTIC TRADE

FOOD PROCESSING, DISTRIBUTION

- Inefficient Production Blamed for Sugar Shortage [A. Platoshkin; IZVESTIYA, 14 Sep 89] 40

GOODS PRODUCTION, DISTRIBUTION

- Roundtable Examines Deficiencies in Shoe Manufacture
[PLANOVOYE KHOZYAYSTVO No 8, Aug 89] 41

HOUSING, PERSONAL SERVICES

- Tambov Oblast Housing Construction Inadequate
[N. Kravchenko, V. Kolobov; SOVETSKAYA ROSSIYA, 8 Jul 89] 46
- Buying Apartments Questions Answered
[L. Novikova; ARGUMENTY I FAKTY No 27, 8-14 Jul 89] 48

ENERGY

FUELS

- Reduced Oil Production Causes Fuel Shortages
[D. Shabanov; SOTSIALISTICHESKAYA INDUSTRIYA, 3 Sep 89] 50
- Oil and Gas Minister Interviewed
[L.I. Filimonov; PRAVITELSTVENNY VESTNIK No 17, Aug 89] 51

ELECTRIC POWER GENERATION

- Kiev Suffering Shortage of Electric Power [N. Baranovskiy; PRAVDA UKRAINY, 31 Aug 89] 52
- Roundtable Discusses Nuclear Power, Related Issues
[SOTSIALISTICHESKAYA INDUSTRIYA, 30 Aug 89] 54
- Letters Express Differing Views on Energy Price Increases
[T. Podolchak, A. Volkov; ARGUMENTY I FAKTY No 36, 9-15 Sep 89] 58

LABOR

- Draft Law on Trade Union Rights Published [TRUD, 28 Sep 89] 60
- Early Version of Trade Union Draft Law Critiqued [Yu. Petrov; TRUD, 15 Aug 89] 66
- Industrial Accident Prevention Incentives Examined [Ye. Pestrukhina; TRUD, 25 Aug 89] 68

MACHINE BUILDING

TECHNOLOGY ACQUISITION, ASSIMILATION, COOPERATION

- Soviet, Western Experience with Flexible Manufacturing Systems Compared
[K. Frolov; SOTSIALISTICHESKIY TRUD No 7, Jul 89] 71

AUTOMATION, AUTOMATED SYSTEMS

- Poor Results of Plant Automation, Robotization Discussed
[A. Nekhamkin; SOVETSKAYA ROSSIYA, 11 Aug 89] 73

TRANSPORTATION

CIVIL AVIATION

Aviation Plant's Practices Scored [A.N. Doynikov; PRAVDA, 4 Aug 89]	75
I-21 Air Navigation System Praised [O. Mikheyev; PRAVDA, 26 Aug 89]	76
New Sochi Air Terminal Planned [R. Ignatyev; IZVESTIYA, 28 Aug 89]	77
Plans Promoting USSR Aviation Industry Examined [I. Klimenko; SOTSIALISTICHESKAYA INDUSTRIYA, 29 Aug 89]	78
An-225 'Mriya' Profiled [A. G. Vovnyanko; GRAZHDANSKAYA AVIATSIYA No 8, Aug 89]	79
Lessons Learned from Tu-144 Noted [Yu. Mamsurov; PRAVDA, 28 Jul 89]	84

MOTOR VEHICLES, HIGHWAYS

MVD Official Comments on Road Accident Statistics [SELSKAYA ZHIZN, 21 Jul 89]	87
Fate of New 'Orbita' Car Pondered [Yu. Shatalov; SOVETSKAYA ROSSIYA, 13 Jul 89]	88

RAIL SYSTEMS

Automated Rail Control Centers Detailed [L.P. Tulupov; ZHELEZNODOROZHNIY TRANSPORT No 8, Aug 89]	90
Railways Minister Interviewed [N.S. Konarev; PRAVITELSTVENNIY VESTNIK No 17, Aug 89]	97
August Rail Performance Analyzed [GUDOK, 2 Sep 89]	99
Passenger Train Delays Scored [GUDOK, 19 Jul 89]	100
Railroad Workers' Grievances Aired [L.B. Titova; IZVESTIYA, 26 Aug 89]	102
Amur River Rail Crossing Reconstruction Noted [A. Yakimov; GUDOK, 13 Aug 89]	103
Tyumen-Yamburg Rail Line Highlighted [A. Balashov; GUDOK, 22 Aug 89]	104
Experts Review High-Speed Rail Line [TRANSPORTNOYE STROITELSTVO No 8, Aug 89]	105
French Assist in High-Speed Line Design [E.Z. Selektor; TRANSPORTNOYE STROITELSTVO No 8, Aug 89]	108
Gas-Fueled Locomotives Research Examined [A.A. Chichkin; GAZOVAYA PROMYSHLENNOST No 6, Jun 89]	109
Merits of D49 Diesel Engine Noted [M. Lidina; GUDOK, 12 Jul 89]	112

MARITIME AND RIVER FLEETS

Organizations Servicing Fleet Highlighted [B. Tsurulnikov; VODNIY TRANSPORT, 27 Jul 89] ...	114
---	-----

ECONOMIC POLICY, ORGANIZATION, MANAGEMENT

Draft Law on Leasing Published

Text of Bill

18200466a Moscow *EKONOMICHESKAYA GAZETA*
in Russian No 36, Sep 89 pp 17-18

[Unattributed article: "Leasing and Lease Relationships in the USSR"; first four paragraphs are *EKONOMICHESKAYA GAZETA* introduction]

[Text] What should the law on leasing entail? What is hindering drawing it up? Why should this particular provision of a regulatory document currently in effect have to be preserved and solidified in law while it is decided this should not apply to others? For a good while now the pages of *EKONOMICHESKAYA GAZETA* in one issue after another have covered the intense search for answers to numerous questions posed by the practice of leasing. Debate and controversy-provoking articles by economic scholars, experts on the national economy, and legal specialists, letters submitted by managers and lessees, and special editions of *EKONOMICHESKAYA GAZETA* have all contributed a great many valuable, constructive proposals and interesting ideas regarding the operation of leasing collectives. Many of these ideas have already been approved and are being actively utilized by lessees.

Still, the leasing issue remains fraught with difficulties and unresolved problems. It is the task of the USSR Law on Leasing and Lease Relationships to remove these problem areas and establish precise socioeconomic and legal conditions for leasing operations. The USSR Council of Ministers is currently drawing up this law under direction of the USSR Supreme Soviet.

But this approach reflects the traditional manner of developing economic legislation. Practical experience introduces other approaches as well, and demands scrutiny and alternative proposals. The draft USSR law "On Leasing and Lease Relationships in the USSR," drawn up by an organizational committee of the country's Union of Lessees, is an attempt to systematize these proposals. The organizational committee members who authored the draft law are A. Volkov, M. Razu, V. Rutgayzer, S. Fatyanov, R. Khasbulatov, Z. Tsutsayev, and Yu. Yakutin. A. Pevzner participated in the development of provisions on partnership and the redemption of leased property.

We invite our readers to take part in a discussion of the draft law. They should send comments and proposals to the Union of Lessees Organizational Committee (Building 6, Kazakova Street, Moscow 103063), as well as to *EKONOMICHESKAYA GAZETA*.

The present law determines the economic, social, organizational, and legal conditions for lessee operations and is directed toward developing forms of actualization of socialist ownership.

The law provides for the greatest possible use of economic leasing to satisfy the growing demand for consumer goods and services, and for various articles of technological production. The law establishes the legal organizational and socioeconomic basis for lessee activity. It guarantees free transition by labor collectives to economic leasing arrangements with the right of subsequent redemption of leased property, while protecting lessee rights and interests and insuring their independence with regard to decisionmaking on fulfilling their statutory tasks. The law defines the relationship between lessees and state organs and offers broad opportunities for the development of self-management and enterprising activity. It increases responsibility on the part of production collectives to produce results.

The Law on Leasing and Lease Relationships in the USSR is aimed at achieving equitable interaction and competition among various forms of socialist ownership and will facilitate the achievement of economic reforms in the USSR.

I. Leasing and Its Place in the Country's Economics

Article 1. Leasing in the System of Production Relationships

Leasing relationships arise in connection with the conditions and nature of the leased entities; realization of proprietary rights by lessor and lessee and rights of redemption; and the organization, distribution and utilization of the appropriated product, as well as establishment of the term of lease.

The lease will stipulate conditions necessary for the organization of collective ownership and the formation of people's enterprises.

Article 2. Laws Regarding Leasing

Relationships regarding the activity of lessees are regulated by the present law and other legislation issued by the USSR and its union republics in connection with it.

Article 3. Leased Entities

The following categories of entities are subject to lease, i.e., proprietary use over a period of time, on a compensatory basis:

a) natural-resource entities (land, forest, mineral deposits, bodies of water, airspace, recreational resources, etc.);

b) property of a state, cooperative, or public enterprise (organization), of a structural unit of an association as the aggregate of its basic resources, working capital, and other material valuables and financial resources;

c) property of shops, departments, sections, farms, teams, and other internal subdivisions of state, cooperative, and other public enterprises (organizations);

d) separate buildings, economic facilities, structures, agricultural and other equipment, means of transportation, working and productive livestock, and other entities of material value;

e) personal property.

Not subject to lease are public resource entities (such as the railroads, communications enterprises, oil and gas pipelines, etc.). A complete listing of public resource entities is established by USSR law.

Article 4. Lessors

Lessors may include proprietors of natural resource entities, property and other items of material value subject to lease, or persons authorized to such entities by law.

Lessors of state-owned leased entities may include state organs with such authorization granted by the appropriate soviets of people's deputies under whose complete disposition the leased entities fall in accordance with the USSR Law on USSR Property.

Article 5. Lessees

Lessees may comprise a lessee organization, partnership, cooperative, enterprise, association, citizen or group of citizens at least 16 years of age.

Lessee organizations and partnerships are established strictly on a voluntary basis and enjoy legal rights as an individual. The purpose of forming a partnership, as opposed to that of a lessee organization, includes eventual redemption of the leased entities in addition to the act of leasing. Conditions for redemption are as stipulated in agreement with the lessor.

The members of a lessee organization or partnership may be employees of the state enterprise which forms the basis for their establishment, as well as other citizens.

Secondary leasing rights may be exercised by internal-production labor collectives as lessees, as well as by their individual members.

A lessee has the right to sublet a portion of leased natural-resource entities, property, and other objects of material value and financial resources without first obtaining the permission of the lessor.

The lessor may not interfere with respect to utilization of leased entities or managerial activity undertaken by the lessee.

The lessee organization, partnership, or cooperative will effect a lease agreement with the organ of state authority or administration empowered with the right of leasing state property and natural-resource entities in accordance with USSR and union republic law.

The state enterprise whose property is leased becomes dissolved upon conclusion of the lease agreement.

In case of nonrenewal of a lease agreement, the lessee organization, partnership, or cooperative is dissolved, and the state enterprise may again be established.

The system of lease relationships may be used at state enterprises without establishing lessee organizations or partnerships.

II. Property Relationships in Leasing

Article 6. The Lessor's Right to Ownership

Regenerative natural-resource entities which are leased remain the property of the lessor throughout the term of lease.

Property and nonreproductive natural-resource entities (mineral deposits) are the property of the lessor in that proportion which remains, as the lease term expires, less minerals extracted and deterioration of basic resources.

Article 7. Lessee Ownership

The lessee owns the entirety of the proceeds gained from production realization (work, services). Augmentation of leased property is the collective property of the lessee. Upon termination of the lease relationship, the lessee has the right to compensation for expenditures incurred by virtue of improvements to the leased entities, irrespective of lessor permission for such improvements, if not otherwise provided for in the law or agreement.

Article 8. Partnership's Right to Redemption of Leased Entities

A partnership has the right to redeem leased entities from the lessor through its own and borrowed resources (credit, issuance of shares, etc.) upon the lessor's consent. Redemption may be accomplished by early lease payment in an amount which completely covers the cost of these entities. In the event the total lease payment amount is less than the cost of the leased property, the partnership will pay the remainder over a period of time determined by agreement of the parties.

Following redemption of leased entities by a partnership, the lease agreement is no longer in effect and the entities become the collective property of the partnership, which itself becomes an independent people's enterprise.

III. The Legal-Organizational Basis of Lessee Activities

Article 9. Formation of Lessee Organization or Partnership

A lessee organization or partnership is created upon the consent of at least two-thirds of the employees of a state or public-organization enterprise desiring to lease the property or other material valuables of this enterprise and appropriate natural-resource entities. Members of a lessee organization or partnership may include employees of the given enterprise and other citizens.

The lessee organization or partnership obtains all the rights of a legal entity from the moment an agreement is concluded with the lessor and its charter registered with the local soviet of people's deputies. Here the lessee becomes the legal successor to the financial and other rights and obligations of the enterprise. The lessor may fully or partially take upon himself the above-mentioned obligations.

The property of new enterprises built as "turnkey" projects and enterprises which have been dissolved, as well as yet unused natural entities, may be offered for lease on a competitive basis.

Article 10. The Lease Agreement

The lease agreement (including redemption conditions for partnerships) is the basic document regulating the relationship between lessor and lessee. It is concluded on the basis of full equality of both parties.

The lease agreement stipulates the rights and responsibilities of lessor and lessee. It may include usage conditions for leased entities according to their designation, redemption conditions, qualification requirements for the leadership positions of a lessee organization or partnership (chairman, executive director), the nature of the lessor-lessee relationship, the nature of financial, scientific-technical, material-technical, social, and external economic interrelationships, conditions governing the sale of lessee production (work, services), including matters of price formulation, conditions governing financial responsibility of lessor and lessee, and possible conditions for lease arrangement on preferential terms. Term of lease is specified in the lease agreement.

Upon expiration of the term of agreement, lessees who have appropriately fulfilled their agreement obligations have the preferential right to renew it.

In the absence of a declaration by one of the parties to terminate the agreement upon expiration, such agreement is considered to be extended for the same period of time as was stipulated originally.

The parties bear responsibility for failure to fulfill their lease agreement obligations, or for improper fulfillment of these obligations as prescribed by law and by the agreement itself.

A change of conditions in the lease agreement or its dissolution may take place with the consent of the parties, or as a result of objective conditions. Thus, the parties are released entirely or in part from their lease agreement responsibility for adherence to the lease agreement if failure to do so is the result of natural disaster or other circumstances over which they had no control.

The lease agreement may be altered or dissolved by a court or by arbitration upon application of one of the parties. The basis for such application may comprise failure on the part of one of the parties to fulfill agreement conditions or certain legal provisions. Dissolution

or reorganization of the lessor does not comprise a basis for altering conditions of the agreement or terminating it.

Article 11. Lessee Charter

The lessee charter is the basic document which regulates the internal economic functioning of the lessee organization or partnership. It is approved by a majority of the general membership and determines the organization's designation, location, sphere of activity, aims, procedure for entry into and exit from the lessee organization or partnership, rights and obligations of members, self-management and self-inspection organs and their jurisdiction, forms and systems of providing wages, length and routine for the working day, work shifts, procedure for granting leaves and days off, procedure for forming ownership and distributing income (profits), conditions governing the reorganization and termination of activity. The charter may include other provisions which are not in violation of the law.

The charter is examined by the local soviet of people's deputies within a month of its presentation for registration. In the event this time requirement is not met, the lessee organization or partnership has the right to present a grievance to court or arbitration, which then must be considered within 15 days.

The local soviet does not have the right to deny charter registration to the lessee organization or partnership. The only basis for denying charter registration is its noncompliance with laws in effect.

Article 12. Self-Management Organs of the Lessee Organization or Partnership

The activity conducted by the lessee organization or partnership is based on principles of full economic accountability, self-financing and self-management in accordance with the charter and existing laws. The highest self-management agency of the lessee organization or partnership is the general assembly. Matters related to conduct of the general assembly in large lessee organizations and partnerships may be resolved by convening conferences or meetings of authorized individuals.

The general assembly elects a council with a chairman for the lessee organization or partnership and an auditing (inspection) commission with a chairman, both for a period of 5 years, and hears reports on their activity. It establishes the jurisdiction, functions, rights, and obligations of each elective organ and executive board of directors, and examines draft lease agreements and charters, and their amendments and supplements. It authorizes the council chairman to sign the lease agreement with the lessor and ratifies the signed agreement. It examines and ratifies plans for economic and social development presented by the executive director. It resolves fundamental issues regarding external financial and joint activity with state, cooperative, public, and other enterprises, associations and organizations, as well

as matters dealing with reorganization and activity termination of the lessee organization or partnership, their entry into and separation from various unions (associations).

During the intervals between meetings (conferences), authority of the lessee organization or partnership is exercised by its council.

The executive director is either elected by the general assembly or employed by the lessee organization or partnership. He hires an administrative apparatus for economic management of the lessee organization or partnership. The executive director and members of the apparatus he has formed are part of the lessee organization or partnership.

The executive director exercises unified management within the limits of his authority.

The auditing (inspection) commission examines the financial and economic activity of the lessee organization or partnership on a regular basis.

Article 13. Organizational Forms of Joint Lessee Activity

Lessees may join with other lessees, with state, cooperative, and public enterprises and organizations, including firms of other countries. They may unite with various kinds of associations, consortiums, concerns, joint-stock companies (corporations), syndicates, trusts, joint enterprises, and other organizational forms of the country's economics.

Article 14. Reorganization and Termination of Activity for Lessee Organizations and Partnerships

Reorganization (merging, annexation, separation, detachment, transformation) and termination of activity (dissolution) of a lessee organization or partnership is accomplished by decision of its general assembly.

Lessee activity may be terminated by decision of a court in the event of bankruptcy or if the lessee repeatedly or grossly violates the law. The decision to terminate may be appealed under due process to a higher court, arbitration, or to organs of the USSR Public Prosecutor.

In the event of dissolution of a lessee agreement or partnership, property and other items of material value, and monetary instruments and securities which remain following settlement of accounts with the lessor, fulfillment of state treasury obligations and obligations to banks and other creditors, are distributed among the members of the former lessee organization or partnership and their successors.

IV. Economic and Social Foundations of Lessee Activity

Article 15. Formation, Distribution, and Use of Financial Sources of Economic and Social Development by the Lessee

The main sources of economic and social development for the lessee are: proceeds from the sale of production (work, services) and unused property; share fees and

membership dues from the leasing collective and other enterprises and organizations; money received from the sale of securities (stocks), damage compensation, and sanctions; bank credits and interest paid by banks for the use of lessee funds temporarily available; various kinds of subsidies, grants, donations, and other sources.

The lessee independently organizes the above-mentioned sources and independently decides all matters pertaining to their distribution and use, being guided exclusively by the terms of the lease and other economic agreements, provisions of the charter, legally established rates of depreciation allowance, insurance and tax, credit interest rates, fee schedules governing discharge of pollutants into the environment, and other existing legal provisions.

The lessee independently selects the mode of economic accountability.

Article 16. Lease Payment

The lease payment is the form through which the financial interests of the lessor-owner are realized for efficacious use of leased natural-resource entities, property, and other material valuables and financial resources. The objective basis for determining the amount of the lease payment is the minimal level of net profit which could be received by the lessee were the property not leased.

The lease payment may be established for all leased entities considered as an aggregate or separately by entity. The amount of the payment and procedure for effecting it are as stated in the lease agreement.

The lease payment can be calculated either as part of the net profit as an absolute sum over the entire term of the lease, with equal or unequal annual installments (considering or disregarding inflation), or as a percentage of the lessee's net profit.

Income received by the lessee as a result of measures taken to enhance the productivity of natural-resource entities and improve production facilities and other property will not result in an increase in the lease payment.

The size of the lease payment may change as agreed to by the parties for periods of time as stipulated in the lease agreement, but not more frequently than once every 5 years. Amount of payment may be reexamined ahead of time upon demand by one of the parties only in the event of a revision of centrally established prices and tariffs, or under other circumstances as provided by law.

The lessee has the right to demand an appropriate decrease in the lease payment if a significant deterioration occurs, due to circumstances beyond his control, in economic conditions as envisaged in the agreement or in the condition of the leased property.

Article 17. Taxation of Lessee Income

The lessee participates in contributing to the state treasury by paying taxes and making other payments as

stipulated by law. Taxation is intended to influence the lessee in his selection of effective courses of action, his production framework and technology, and his means of obtaining sources of production, scientific-technical, and social development, while observing principles of social justice in effecting their distribution.

The system of taxation should provide for a differentiated approach in tax assessment depending on the leased entities, type of lease, the lessee's aims, and his use of profit for consumption and accumulation.

In order to increase stability with regard to the economic conditions of lessee activity and increase his motivation to expand production, a firm rate of taxation is imposed for a period of at least 5 years.

In order to provide an economically feasible correlation between funds allocated by the lessee toward wages and production and social development, tax rates for the personal income of members of the leasing collective are established on a progressive scale, with preferential taxation applied to other expenses.

Additional tax benefits may be granted the lessee with the aim of stimulating production necessary for the population and national economy (work, services), lowering production costs (tariffs), and accelerating scientific and technological progress.

In the event a lessee directs part of his income (profit) to the Soviet Children's Fund imeni V.I. Lenin, the Soviet Peace Fund, the Soviet Culture Fund, or other charitable causes, this portion of income is not subject to taxes.

In the event of concealment or underestimation of income subject to taxation, the concealed sum in its entirety will be recovered from the lessee and transferred to the treasury, in addition to a fine being imposed as stipulated by USSR law.

Article 18. Price Formation, Credit, and Lessee Accounting

Lessee rights and obligations in the sphere of price formation are exercised in accordance with the basic principles of state administration and price regulation under conditions of socialist market operation and competition.

Credit in the system of lease relationships is intended to facilitate stability with regard to the lessee's financial situation, stimulate his development, expand the production and sale of consumer goods and technological production (work, services) with the aim of achieving the greatest possible satisfaction of specific consumer demands.

Credit may be offered on preferential terms, as determined by an appropriate banking institution, to a newly formed leasing collective to assist in organizing its operation.

Credit is extended by a bank to a lessee on the basis of an agreement defining the mutual obligations and responsibilities of the parties. In order to guarantee the lessee independent disposition of his funds, he alone may direct the transfer of such funds (except in the case of arbitration or decision by a court). The lessee handles all finance and accounting matters, including payments to the treasury and payment of wages, in the sequence according to which the appropriate documents are received and entered (when terms of payment become effective).

The state will assist partnerships in the redemption of leased property through preferential tax treatment of bank revenues used to provide credits for this purpose.

The lessee accomplishes his finance and accounting operations proceeding from obligations to enterprises, organizations, and individual citizens without transfer of funds through credit institutions, or through the use of available cash, without any limitation on the amount of payment. The lessee independently determines the limit of available funds for current expenditures to remain permanently at his disposal.

A lessee who systematically fails to fulfill his finance and accounting obligations may be declared insolvent by the bank. Prior to taking measures to financially rehabilitate the lessee, the bank determines the sequence of payments to be made in fulfillment of his obligations. Creditor-enterprises (-organizations) may terminate production deliveries and services to a lessee declared insolvent.

In exceptional cases, a lessee may obtain funds on credit under lessor guarantee.

If a lessee is insolvent and operating at a loss, the bank has the right to raise the question of dissolving his business in a prescribed manner, while safeguarding the property interests of all creditors.

A lessee may offer credit to other enterprises and organizations based on his own funds under conditions determined by agreement of the parties, including agreement as to the interest rate for such credit.

A lessee organization or partnership may, upon decision of the general assembly, invest a portion of its free income in bonds of the state internal premium loan, bank certificates, and other money instruments in circulation. Income generated through such investments accrues to the disposition of the lessee.

Article 19. Foreign Economic Activity Conducted by the Lessee

Lessees are extended the right, according to established procedure, to engage directly in the conduct of export-import operations, including the export and import of goods (work, services).

Within the framework of the lease agreement, lessees may create joint ventures, international associations, and organizations with appropriate CEMA [Council for

Economic Mutual Assistance] member nations and other socialist countries, and joint enterprises with firms of the capitalist and developing countries. Such enterprises and organizations are established both in the USSR and in foreign countries.

USSR banks may extend credits in Soviet and foreign currency, as well as in convertible rubles, to lessees engaged in foreign trade activity, using currency proceeds, money from the sale of imported production, or other lessee funds to effect repayment.

Lessees bear full economic responsibility for the efficacy of their foreign economic activity and efficient use of currency funds. In the event they are unable to fulfill their responsibilities regarding exports or other lease-agreement responsibilities, they compensate for loss and damage by means of all their property, including currency. Additionally, they pay their foreign partners fines and other penalties with currency from their accumulated funds if they are at fault for the violation.

Article 20. Labor and Wages in the Lessee Organization or Partnership

Labor relations regarding members of the lessee organization or partnership are regulated by this law and by the charter.

The lessee organization or partnership independently determines the forms and systems for paying wages, the length and routine of the working day, work shifts, and procedure for granting days off and vacation. In this regard, members of the lessee organization or partnership are offered an annual paid leave at least as long as that established by law for the appropriate category of workers and employees.

The lessee organization or partnership provides measures for labor security, occupational safety, and sanitary conditions in the industrial work place. It assigns employee pay grades and determines the professional composition of workers in accordance with the standards established for state enterprises.

Pregnant women are assigned lighter work, while maintaining the average salary they drew from their previous work. Leaves due to pregnancy, childbirth, and child care, in addition to other benefits for pregnant women and women with small children, are granted in accordance with established procedure for female employees and workers.

The lessee organization or partnership establishes a shortened work day for persons under 18 years of age, and provides other benefits as stipulated by existing legislation regarding workers and other employees.

V. Relationship Between Lessee and State Organs

Article 21. State Guarantees Protecting the Rights and Legal Interests of Lessees

The state guarantees protection of the rights and legal interests of the lessee. His rights to property received

according to the lease agreement are protected on an equal footing with that established by civil law regarding the right of ownership. He can demand the removal of any obstacles in the way of possession, use, and disposition of leased property, and can receive damage compensation for loss or damage to his property caused by anyone, including the lessor.

Article 22. Relationship Between the Lessee and the Soviets of People's Deputies and Their Executive Organs

The soviets of people's deputies and their executive organs will:

- do their utmost to encourage lessee participation in accomplishing tasks related to the national economy, interbranch, and regional matters;
- render various forms of assistance to lessees, to include affording them free as well as leased use of land, production and other facilities;
- render utmost cooperation in effecting social development of lessee organizations, partnerships, and cooperatives leasing the property of state enterprises.

For his part, the lessee is obliged to participate on a permanent basis in supporting the local and national budgets by virtue of paying taxes as prescribed by law.

Article 23. State Supervision and Accountability

The operation of lessee organizations and partnerships is monitored by financial organs and, when necessary, by other state organs in accordance with supervisory functions they exercise with respect to lessee activity.

Financial organs supervise the keeping and trustworthiness of financial records and monitor the payment of taxes to creditors.

The lessee maintains statistical records for the state in the manner prescribed for cooperatives and is responsible for their accuracy. Requirements for maintaining and submitting records other than those prescribed by the state are prohibited.

Maleyev Commentary

18200466b Moscow *EKONOMICHESKAYA GAZETA*
in Russian No 38, Sep 89 p 14

[Article by V. Maleyev: "An Alternative Asks to be Heard"]

[Text] The draft law "On Leasing and Lease Relationships in the USSR" published in issue 36 of *EKONOMICHESKAYA GAZETA* elicited numerous reader responses. Evaluations of the provisions and principles contained in it are not all the same and sometimes oppose one another. One person demands a more radical approach, another questions the right of existence of an alternative variant to a law currently being drawn up by

the USSR Council of Ministers. But the majority of our readers supports the initiative of the organizational committee of our country's Lessee Union and are coming out in favor of the ideas being proposed.

Perhaps the first serious test for the draft law was the meeting which took place at the Academy of National Economics of the USSR Council of Ministers, where the law was discussed by its authors and students of the economics faculty. In his opening remarks, Academy Prorector A. Modin noted the importance of a new approach in preparing legislative documents and the significance of the work accomplished in this regard by the action committee which presented the draft law on leasing.

Directors of enterprises and leading experts from the country's central economic organs, republic, ministry, and department organs—people very familiar with the workings of the economic mechanism by virtue of their job experience and taking course work here to enhance their skill level—not only acknowledged and approved of the progressive essence of the draft law, but they contributed a number of valuable observations, clarifications, and additions.

It was acknowledged unanimously by discussion participants that the published draft law lays out legal standards removing restrictions which have been hindering development of the leasing process. These standards make it possible to form enterprises entirely independent of the command-administrative system, without interim reorganization. The economic activity of such enterprises is guided not only by state interests, but by the interests of their own labor collectives and the regions in which they are located. Support was given for provisions ascribing the role of lessor to the soviets of people's deputies or their authorized organs, which would protect the collectives from departmental subjectivism in making the decision as to whether or not there should be a lease at the enterprise (Article 4). Article 9 also met with approval. This provision states that the decision to adopt a lease arrangement will be considered to have been made if two-thirds of the collective vote for it, regardless of the position taken by the administration and higher organization. It was noted further that the new procedure for forming self-management organs, when the hiring of an executive director and management apparatus is introduced, will isolate managers from chance mood fluctuations and emotional factors, the influence of which is impossible to control during the process of elections (Article 12).

And most importantly, perhaps, the thing most attractive about the draft law—it envisages for the first time the emergence of collective ownership. Thus, Article 8 addresses the right of redemption of entities leased from a lessor with his consent, following which a new actor will appear on the scene in our economic structure—the people's enterprise. In essence, we are talking about creating revenues not only from salaries, but from property ownership as well, a factor which will, in the view of

the authors of the draft law, make the individual a true co-owner of an enterprise, interested to the greatest possible degree in seeing it flourish.

The ideas set forth in the draft law met no fundamental objections from the discussion participants. A critical attitude prevailed, however, when a detailed analysis of the formulations and provisions of the articles was conducted. And here the authors of the draft law heard many useful comments.

Specifically, T. Teriyezmyan, head of the statistics administration of the agroindustrial complex of the Armenian SSR's State Commission for Statistics, noted that the draft law provides (in Article 7) for the right of ownership of a lessee only to proceeds earned from the sale of production, and not to the production itself, which, in his opinion, restricts the rights of the lessee and leaves a loophole which allows administrative interference. In the agrarian sector, acknowledgment of the lessee's right of ownership of what he has produced will apparently result in a shift to agreed prices. A number of problems will arise here, evidently, related to price increases. However, when we consider the importance of developing lease relationships and their significance with respect to building up the forces of production, the right to have at one's disposal the entirety of his production must be affixed to the final version of the law. He stressed at the same time that the law must provide for differentiation in rental payments.

E. Kosovskiy, director of economics at the Tiraspol'skaya Scientific-Industrial Association, discussed the system of taxation proposed in the draft law (Article 17), which provides for a differentiated approach to taxation, depending on the entity being leased, type of lease, business purpose, and use of revenues. In order to avoid a return to individual tax rates, Kosovskiy believes a unified tax system should be established, and that tax advantages stipulated in appropriate legislation must be set up so as to stimulate positive trends.

V. Pavlov, branch chief of the Russian Sberbank USSR, pointed out that the draft law (Article 3) fails to address the concept of "credit resources" or to raise the question of bank leasing. Yet such an arrangement is already in effect in Moscow for leasing a branch of the USSR Sberbank.

V. Molovichko, chief economist for the industrial association Sakhalinrybprom [Sakhalin Fishing Industry], noted that the draft law is based on the premise that leasing collectives will operate profitably, but in actuality the prospect of bankruptcy cannot be ruled out. What happens to a collective, to the people, to the fixed assets, in such an instance? All of this must be addressed in detail in the draft law.

V. Fuklev, chief of the Voroshilovgrad Oblast Administration of the Russian Sberbank, is convinced that a more detailed analysis must be given to property relationships which arise during transition to a leasing

arrangement. In his view, Article 2 must be supplemented with a provision that lease relationships are regulated by the USSR Law on Property and other applicable legislation enacted in the USSR and the union republics.

O. Akhrimenko and V. Khyzenko, chief engineers at the Ukrkomplektmontazh Trust and Kommunmash Scientific-Industrial Association of the former USSR Ministry of Construction and Road Machinery Manufacture, proposed that the law provide a clear-cut, unambiguous, and unconditional formula, and that provision be made for rescinding directives and instructions pertaining to leasing which contradict the law. They believe it is necessary to stipulate the equal rights of lessors and lessees, confirm the role of the soviets as arbiter, and obligate local soviets to require low-profit enterprises to shift to a leasing system. They want to introduce provisions into the law for lessee retirement benefits, and provisions defining the lessee relationship with the unions.

N. Babayev, chief of the Transportation and Communications Statistics Department of the Azerbaijan SSR State Commission on Statistics, feels that the relationship between leasing collectives and planning organs must be stipulated more clearly. A. Lebedev, chief specialist of the Finance, Accounting, and Resource Management Section of USSR Gosplan, called attention to the vagueness in formulating the role of the soviets of people's deputies as sole lessors. V. Eykhman, director of the Khimstroy [Chemical Construction] Trust of the Kazakh SSR State Construction Ministry, and I. Rudy, chief economist at the Belorussian Sberbank USSR, pointed out the all too general nature of the article which regulates social protection for members of a leasing enterprise.

On the whole, discussion of an alternative draft law at the Academy of National Economics of the USSR Council of Ministers has shown, as Academy Prorector Modin pointed out, that it is extremely important to examine and evaluate all articles and all provisions of the documents being prepared from the standpoint of actual economic experience.

A draft law which would fundamentally answer all the questions put to it by today's economic realities, which would not eventually "shave off the beard" of regulatory and prohibitive interpretations, will apparently not be drawn up in 1 hour. What we need is a well thought-out synthesis of the ideas which are presently floating around, a comprehensive, painstaking treatment and discussion of the issues. The action committee has proceeded precisely on this basis in producing its draft. No one believes the law will be adopted in exactly this form. The idea is to produce an alternative variant to this law which is presently being drawn up in the depths of the apparatus and help impart to it the most revolutionary and progressive ideas, ideas which constitute the epitome of rationality and cannot—as has happened so many times in the past—be brushed aside.

Amendments to Law on Cooperatives Suggested

904A0008A Moscow PRAVITELSTVENNYY VESTNIK in Russian No 19, Sep 89 p 10

[Article by Ye. Sosnin: "In the First Reading: How Amendments to the USSR Law on Cooperatives Emerged"]

[Text] *As we know, the USSR Law on Cooperatives was passed in May 1988. This itself gave much room for comprehensive development of the cooperative movement.*

In 1987, there were 13,900 production cooperatives in the country, and they produced goods and services amounting to 350 million rubles. Last year, their number increased to 77,500, and the scale of their activities increased to 6 billion rubles. In the first half of this year, these indicators have practically doubled. In short, the cooperative movement is gaining strength, although not without difficulties.

Recently the USSR Council of Ministers submitted to the USSR Supreme Soviet draft amendments and additions to the USSR Law on Cooperatives. This was preceded by collective work of specialists in the area of economics, law, and management activities, and of the cooperators themselves. The activities of many cooperatives were analyzed. Special attention here was given to improving the legal mechanism regulating the mutual relations between the state and the cooperators.

Just how did the amendments to the law come about? We are giving readers the opportunity to familiarize themselves with excerpts from a verbatim record of a meeting with the deputy chairman of the USSR Council of Ministers, L.I. Abalkin, at which the proposals on making changes and amendments to the USSR Law on Cooperatives were discussed; the readers can size up the positions of the specialists for themselves.

A.V. Orlov, deputy chairman of the USSR Council of Ministers' State Commission on Economic Reform:

—At the new stage of economic reform, we must find conditions making it possible to ensure a balanced operation of the state and cooperative sector.

V.A. Sorokin, chairman of the Union of Production Cooperatives:

—One bothersome question is the procedure for authorizing registration of cooperatives. Why does someone have to have the right to conduct the registration? Let the consumer resolve this himself.

G.V. Dzis, deputy chairman of the Ukrainian SSR Council of Ministers:

—I believe it is necessary to enter a paragraph in the new version of the Law on Cooperatives which specifies that credit for cooperatives has a particular purpose and that it is granted only if there is authorized capital.

Labor collectives of enterprises are participating very much in the development of the social structure of

regions by means of donations. Apparently, this provision must also be applied to cooperatives which operate on a given territory.

V.N. Lukyanchenko, chairman of the Leningrad Oblast Cooperatives Union:

—If the task is for cooperatives to revive our country's economy, it is necessary to analyze many mistakes. Cooperatives should not be opened at an enterprise by an individual shop. This adversely affects the economy, and money is transferred. Public catering cooperatives must not be opened if there is no base for production of agricultural products. Trade and purchasing cooperatives must not be opened without warehouses and storage facilities; they must have permanent facilities.

V.I. Kazakov, deputy chairman of the RSFSR Council of Ministers:

—The appropriate paragraph of the Law on Cooperatives should be amended with a provision according to which financial bodies would be granted the rights to audit the activities of cooperatives.

N.A. Makayed, deputy chairman of the Belorussian SSR Council of Ministers:

—Local soviets must be given the right to decide on the advisability of creating cooperatives.

G.V. Koshlakov, first deputy chairman of the Tadzhik SSR Council of Ministers:

—I support the proposal that deputies should exercise control over the creation of cooperatives. Not only the authorization function but also the distribution function need to be transferred to the soviets. There should be an authoritative deputy commission which would determine the advisability of creating cooperatives.

V.I. Rayevskiy, deputy chairman of the Estonian SSR Council of Ministers:

—It is proposed that a cooperative have only one account. But if a cooperative has created branches, they need their own accounts; there should be sub-accounts.

A.F. Klimov, chairman of the "Kosmos" Cooperative (in Moscow):

—The connection with the Law on State Enterprises is poorly traced in the draft document. I would also like the amendments to the Law on Cooperatives to be closely linked to the USSR laws being drawn up on lease and lease relations, and on land use and ownership.

S.A. Abdildin, permanent representative of the Kazakh SSR Council of Ministers:

—I will propose amending the draft with a paragraph which would call for cooperatives to make fixed payments for use natural resources as a part of national property. It is also advisable to work out in detail a

paragraph of the article of the Law on Cooperatives in relation to price formation, establishing that cooperatives bear responsibility for strict observance of price discipline and price formation procedures, and are obligated not to set prices too high.

V.A. Tikhonov, academician of the Academy of Agricultural Sciences imeni V.I. Lenin and president of the Union of United Cooperatives of the USSR:

—I believe it is necessary to establish that cooperatives can sell on the foreign market only products they produce and for which an export license has been validated by the appropriate union or republic organizations.

There is one aspect with remuneration of the work force. It was stated at the Congress of USSR People's Deputies and at a session of the USSR Supreme Soviet that cooperatives must pay local authorities for the work force. Perhaps it is better for us to introduce a tariff system for their registration and re-registration?

A.A. Krasnopivtsev, deputy chairman of the USSR State Committee on Prices:

—Of course, cooperatives may earn more than state enterprises though economy, innovation, and initiative. Based on these tenets, if we do not want cooperatives to jack up the prices, we must think about how to formulate more clearly in the law a provision for prices not to be artificially set too high for means of production. In order to create equal economic conditions and make the level of cooperative prices close to state prices, we should call for the following. If cooperatives sell products at prices that are not higher than centralized, fixed prices, they receive material and technical resources at prices that are in effect for state enterprises. This right must also be given to cooperatives specializing in consumer goods.

V.N. Semenov, deputy USSR minister of finance:

—The pension system procedure extends to cooperatives. But there is a mass avoidance of payments to the social insurance budget. This should be consolidated in the new wording of the law.

S.V. Anisimov, deputy chairman of the USSR Gosplan:

—Today, material and technical support for cooperatives and state enterprises is not the same. This must be corrected.

B.V. Yelagin, deputy chairman of the All-Russian Union of United Cooperatives:

—I would like to see the soviets of people's deputies rely more on the unions of cooperatives in regulating the activities of the cooperatives.

Basic Indicators of Cooperatives' Activities

Type of Cooperatives	Number of cooperatives in operation (thousands)		Number of people working in them, (thousands)		Volume of products (services) sold since beginning of year (millions of rubles)	
	as of 1 Jan 89	as of 1 Jul 89	as of 1 Jan 89	as of 1 Jul 89	during 1988	as of 1 Jul 1989
Total	77.5	133	1,397	2,939	6,061	12,864
Consumer services	23.7	31.2	417.4	556.1	1,374	1,742
Production of consumer goods	16.1	25.7	331.8	580.3	1,544	2,706
Public catering	7.6	6.6	62.3	60.6	354	245
Procurement and processing of secondary raw materials	2.4	2.6	41.4	74.4	344	395
Construction (other than those that pertain to consumer services), planning and surveying cooperatives	3.4	14.9	124.6	585.2	531	2,549
Agricultural cooperatives	2.1	4.4	19	47.1	55	137
Trade and purchasing cooperatives	5	6.9	51.6	70.1	857	885
Artistic and design cooperatives	1.4	3	18.2	48.5	52	157
Providing medical services	1.9	2.8	32	47.7	68	119
For organizing leisure time	1.8	2.4	25.9	38.5	65	118
Scientific research, planning and design cooperatives; for developing software; for providing information services	2.6	5.8	61.5	182.4	172	866
Other types of cooperatives	9.5	26.7	211.3	647.8	645	2,945

Our Commentary

These data on the specialization and scale of activities of cooperatives are being published for the first time. One can see from this table that a considerable portion of the cooperatives are engaged in the sphere of domestic services and production of consumer goods. Construction and planning and surveying cooperatives are quite widely represented today. And the number of workers they employ ranks at the top—about 585,000.

The cooperative movement has not yet reached the proper scope in such spheres of production and services as agriculture, procurement and processing of secondary raw materials, public catering, artistic and design activities, medical services, and organizing leisure time.

The question arises: In what are the 26,700 cooperatives designated as "other types of cooperatives" in the table engaged?

This group of cooperatives, quite imposing in its composition—647,000 people—perform a wide variety of work and services in various spheres. This includes charitable activities and resolving ecological problems. Quite a few cooperatives have been created in schools, where the lads are mainly engaged in producing various consumer goods. Cooperatives are fairly widespread among the nationalities of the north. Today there are also cooperatives involved in care for the elderly, disabled, sick, and children. Unfortunately, they are

extremely few—only 68. The number of cooperatives specializing in sports and health activities and providing passenger-transport services is comparatively small.

...So, there were different opinions on the problem of further development of the cooperative movement. But that is how it should be, for an in-depth and thorough study of the changes and amendments to the USSR Law on Cooperatives was required. The proposed changes to the law are aimed primarily at further improving services to the population, putting the work of cooperatives in order, and eliminating negative phenomena in their activities. It is planned to grant the soviets of people's deputies the right to determine the priority directions and to establish favorable conditions for creating those cooperatives whose activities are most needed to satisfy the citizens' needs.

In addition, the draft document calls for expanding the potentialities of the deputy commissions in examining the issue of the activities of cooperatives. Measures have also been determined for expanding the rights and independence of cooperatives in organizing material and technical supply; their rights to participate in inter-branch associations and other organizational structures, including with state enterprises and foreign companies, are being expanded. It calls for regulating cooperatives' payments on obligations and spending of the wage fund, the size of which will be regulated in accordance with USSR legislation.

The first phase of the work on changes and amendments to the Law on Cooperatives is complete. Now it is up to the people's deputies, who will have to review this document at the next session of the USSR Supreme Soviet.

Deputy Chairman Notes Reform Commission's Tasks, Responsibilities

18200450 Moscow PRAVITELSTVENNYY VESTNIK
in Russian No 16, Aug 89 pp 8-9

[Interview with Doctor of Economic Sciences Petr Makarovich Katsura, first deputy chairman of the State Commission on Economic Reform of the USSR Council of Ministers, by Yu. Aleksandrov under the rubric "Standing Bodies": "Large-Scale Reform"]

[Text] *The government has adopted a decree for a State Commission on Economic Reform under the USSR Council of Ministers. The first deputy secretary of the commission, Doctor of Economic Sciences P.M. Katsura, comments on the substance of that document and relates the general directions of the activity of the new standing body of the government in a conversation with a correspondent from PRAVITELSTVENNYY VESTNIK.*

Portrait of the Interviewee: Belorussian, born in 1930. Completed Moscow Engineering Economics Institute as an engineer-economist. CPSU member. Worked at the Minsk Tractor Plant, the Belorussian SNKh [Council of the National Economy] and the USSR Ministry of the Automotive Industry. Deputy director and director for economics of the AvtoVAZ Association from 1969, and head of the Department for Improving the Management of the National Economy in the Administration of Affairs of the USSR Council of Ministers since 1985. Named first deputy chairman of the State Commission for Economic Reform of the USSR Council of Ministers in July 1989.

[Aleksandrov] Petr Makarovich, dissatisfaction with the course of economic reform was sounded both at the Congress of People's Deputies and at a session of the USSR Supreme Soviet. Marking time, an incompleteness of solutions and the half-hearted nature of some of the solutions that have been adopted have been noted in many of the most important links in it. It is obviously these circumstances that have impelled the government to create the State Commission?

[Katsura] N.I. Ryzhkov formulated this decision as such in his report to the session of the Supreme Soviet: "The task of developing and deepening radical reform and the necessity of daily and systematic analysis of the processes that are transpiring, as well as the growing need for a profound and comprehensive substantiation of the next steps in economic transformations, persistently dictate the expediency of creating a State Commission on Economic Reform of the USSR Council of Ministers as a standing body of the government." And the coordination of short-term measures and synchronization of improvements in planning activity, the credit and finance mechanism, wholesale trade and prices can in

reality be achieved only on the basis of clear-cut positions and fundamental decisions connected with the accomplishment of strategic tasks. In short, a unified governmental mechanism that would take on the comprehensive management of the whole process of restructuring economic relations in this difficult contemporary period in the development of the country's national economy is needed.

[Aleksandrov] What are the chief functions of the State Commission and the guidelines for its activity?

[Katsura] It has been charged first and foremost with developing the scientific foundations and principles for managing the development process itself and making radical economic reform more profound. A whole set of measures aimed at the creation and reliable functioning of the new model of socialist economic management and the systematic and profound analysis of its influence on socio-economic processes and, ultimately, on raising the living standards of Soviet people must necessarily be realized.

[Aleksandrov] What should the measures, essentially signifying the installation of new levels into the mechanism of economic operations, consist of in concrete terms?

[Katsura] They have been clearly recorded in the decree. We will first and foremost have to improve the mechanism of economic operation based on a combination of diverse forms of ownership and the creation of different conditions for the development of all forms of economic management.

Then, the affirmation of the socialist market and a system for its efficient functioning. Such a system should envisage in particular reliable methods for managing market relations proceeding from the tasks of the steady development of the economy, the elimination of monopolism in enterprise activity and the assurance of a degree of social protection for all members of society.

The commission is also at the head of a radical restructuring of the credit and finance system, methods of price regulation and the practices of taxing the income of enterprises, organizations and citizens. The goal of this work is understandable: to create a reliable tool for affecting the economic vested interest of collectives and individuals in improving the end results of labor and reinforcing the finances of the state.

Radical changes are needed in the economic relations with the republics and local organs of power, and a transition to self-financing and self-management must be made in the union republics and other regions. This is one of the most important links in the new mechanism of economic operation. The principles of socialist federation and economic independence of the republics will be combined organically with their active participation in resolving nationwide tasks and the union-wide division of labor. Certain union republics and regions, as is well known, are expected to convert to a new model of

economic management as early as next year. The experience accumulated there, after careful study, will undoubtedly make possible the essential corrections for its further incorporation in other regions.

The commission's attention will naturally also focus on the organizational structures of the management of sectors of the national economy and radical changes in the functions of the ministries, as well as the formation of new and progressive operational economic structures at the base level of the economy. Life itself has already led to the creation of diverse intersector associations along the lines of concerns, consortia, unions and associations made up of enterprises on a voluntary basis. Other types of state, cooperative and joint-stock organizations formed by labor collectives are also arising. It is clear that they are in need of maximum support. And there is just one criterion herein—the utmost development of the initiative and independence of the collectives based on the strict observance of laws on the enterprise and on cooperation by state management organs.

There is finally one more important sphere of activity that we have just begun to address in recent years. That is studying foreign experience in the realm of improving the mechanism of economic operation and the management of the economy along with various instruments of state regulation of market relations. The use of that experience will naturally also be part of the obligations of the commission.

[Aleksandrov] What are the means of resolving the tasks facing the commission, the methodology of its work, if it can be expressed thus?

[Katsura] Perhaps the most fundamental element herein is close interaction with the commissions and committees of the USSR Supreme Soviet. It is namely in such interaction, it seems, that the transition to the law-governed state management of the economy will be accomplished. The commission, in conjunction with other—first and foremost central—economic bodies, will prepare and present for the consideration of the Presidium of the USSR Council of Ministers draft legislation and government resolutions for further improving economic management. The State Commission will furthermore have the right, within the limits of its jurisdiction, to adopt decrees that are binding on the central economic bodies, ministries and agencies, councils of ministers of the union republics, enterprises and organizations.

The State Commission has been charged with many other duties as well. They include in particular methodological guidance and coordination of the activity of ministries, agencies and academic institutions in creating an integral system of economic management. It organizes the development of drafts of methodological and standard documents connected with economic reform and monitors their correct application. Plans for the organizational structures of the management both of sectors of the national economy and intersector and

territorial production complexes and their interaction with regions of the country will be considered at sessions of the commission. It will guide economic experiments, summarize the results and facilitate their dissemination. And, of course, define the topics for academic research into problems of economic reform. Including collaboration with the academic institutions of the socialist countries, as well as academic and business circles in the developed capitalist countries.

[Aleksandrov] How does the decree define the system of mutual relations of the commission with other standing bodies of the USSR Council of Ministers, ministries, state committees and central economic agencies?

[Katsura] The commission directly guides the activity of Gosbank [State Bank], Goskomtsen [State Committee on Prices], Goskomtrud [State Committee for Labor and Social Problems] and Goskomstat [State Committee for Statistics]. It also coordinates work on the execution of economic reform for the standing bodies of the USSR Council of Ministers, the union Gosplans, Minfin [Ministry of Finance], Gossnab, Gosstroy [State Construction Committee], GKNT [State Committee for Science and Technology] and Gosstandart [State Committee for Standards]. The commission also considers questions of organizing cooperative activity in the national economy (aside from agricultural and consumer cooperation) and the activity of the All-Union Economic Society.

The Academy of the National Economy of the USSR Council of Ministers is also under the jurisdiction of the commission. It is based on a scientific-research organization—the Economics Institute of the USSR Academy of Sciences—in its work.

[Aleksandrov] It can be seen from all that you have said that the spectrum of duties charged to the commission is unusually broad, while the circle of problems that it will have to solve is truly multifaceted: from long-term global problems to routine operational questions. How can all of this best be combined so that one area of the work is not pushed into the background?

[Katsura] As for routine work, the principal weight of it probably lies on the working apparatus of the commission. And an economic-sciences council is being created for the all-round scientific substantiation of measures to accomplish economic reform, further develop and deepen it and analyze in expert fashion the proposals that are made. It will include leading scholars and specialists from the national economy, and Academician A.G. Aganbegyan (henceforth also rector of the Academy of the National Economy of the USSR Council of Ministers) has been named head of it.

It should be emphasized that the formation of the State Commission on Economic Reform of the USSR Council of Ministers does not remove from other state bodies—first and foremost the ministries—responsibility for realizing the concepts of radical economic reform devised by the June (1987) Plenum of the CPSU Central Committee.

[Aleksandrov] Who else is on the State Commission?

[Katsura] The USSR Council of Ministers has designated Academician L.I. Abalkin as chairman, whom the USSR Supreme Soviet has approved for the post of deputy chairman of the USSR Council of Ministers. One deputy chairman is S.V. Assekritov—a colleague of mine, he was my deputy at the department. Another deputy—A.V. Orlov—headed the All-Union Scientific-Research Institute of Competitive Trade Conditions and the Study of Consumer Demand (VNIKS). Also approved as a deputy chairman of the State Commission was S.A. Sitaryan. He scarcely need be presented to the readers—an academician and first deputy chairman of USSR Gosplan. The commission also includes the leaders of a number of state committees, ministries and agencies, their first deputies and other deputies, operational managers and scholars well known to us. They include four academicians and one corresponding member of the USSR Academy of Sciences along with fourteen doctors of sciences.

The commission, is short, is not simply imposing. It includes people who are active advocates of restructuring who are taking part—on both the theoretical and the practical planes—in realizing economic reforms.

[Aleksandrov] Let's return to the working apparatus of the commission. We are publishing a diagram reflecting its structure. Could you comment briefly on it?

[Katsura] It can be seen from the diagram that the commission apparatus consists of five departments, and

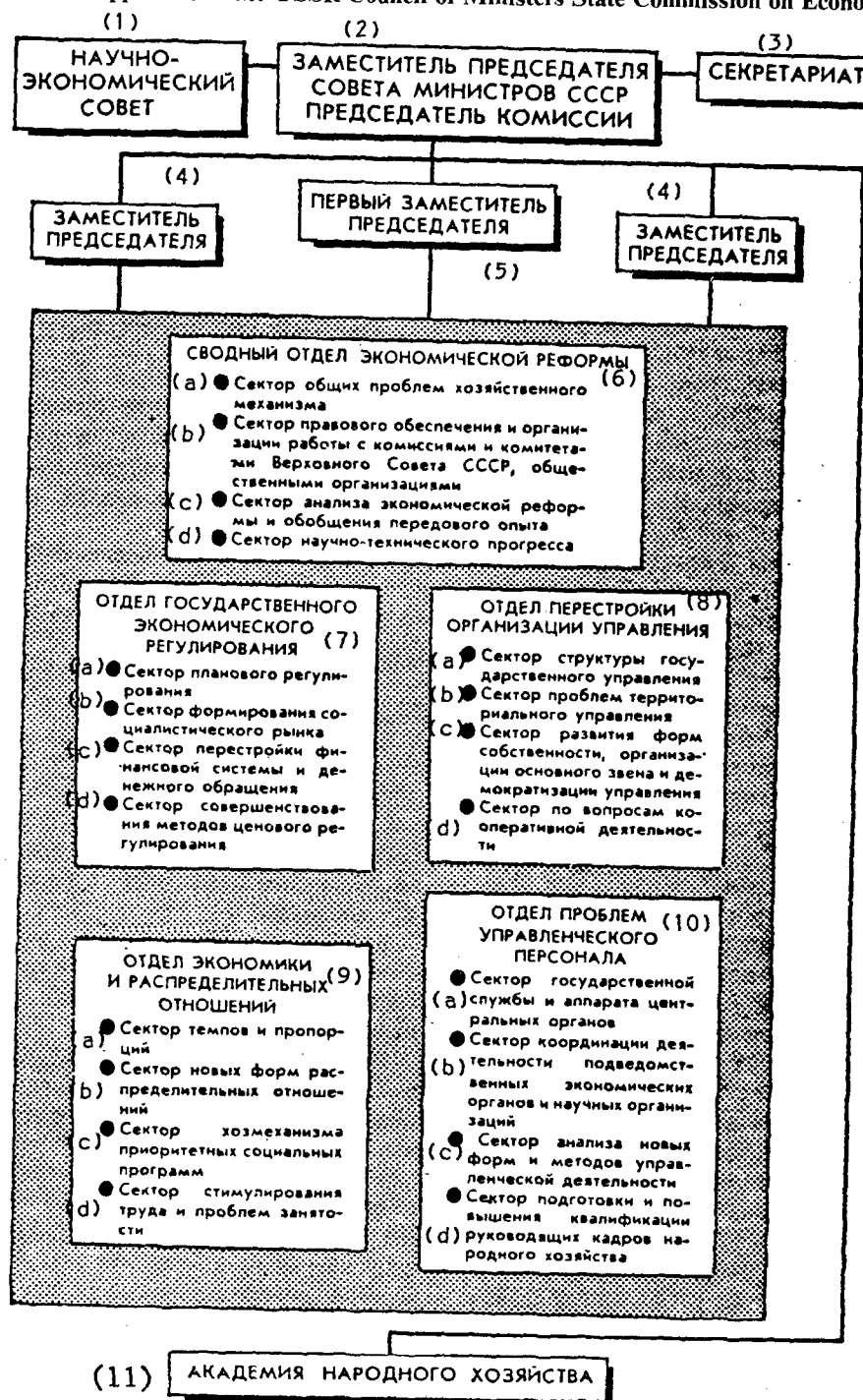
each department includes several sectors. Certain questions arise: isn't this structure too complicated, isn't the administrative apparatus ballooning again? I would answer both of those questions in the negative. The point is that a comprehensive approach is needed as never before in the development and realization of economic reform. It is namely due to the lack of such an approach in the mechanism of economic operation that is operative today that "blank spots" have appeared which have elicited just reproaches directed at the process of pursuing radical economic reform.

The structure that has been adopted for the apparatus essentially reflects the whole aggregate of problems that the commission will have to resolve and all of the directions of its upcoming activity. One department, for example—state economic regulation—now gathers together questions connected with the planned regulation of the economy, the formation of the socialist market and the improvement of the financial system, monetary circulation and price regulation. That is as it should be: they can only be considered as a unified system, in the direction of deepening the reform of the economic system.

It is essential to note that the commission apparatus will be formed from the staffs of the corresponding subdivisions of the USSR Council of Ministers, ministries and agencies.

I am convinced that the decree on the State Commission on Economic Reform creates a solid foundation for its successful and fruitful operation and for the rapid resolution of the tasks in that realm that have been advanced by the Congress of People's Deputies and the USSR Supreme Soviet.

Structure of the Apparatus of the USSR Council of Ministers State Commission on Economic Reform



Key:

1. Economic-Sciences Council
2. USSR Council of Ministers Deputy Chairman and Commission Chairman
3. Secretariat
4. Deputy Chairman
5. First Deputy Chairman
6. Composite Department for Economic Reform
 - a) Sector for general problems of the mechanism of economic operation
 - b) sector for legal support and organization of work with commissions and committees of the USSR Supreme Soviet and public organizations
 - c) Sector for analysis of economic reform and summarization of progressive experience
 - d) Sector for scientific and technical progress
7. Department for State Economic Regulation
 - a) Sector for planning regulation
 - b) Sector for the formation of a socialist market
 - c) Sector for restructuring the financial system and monetary circulation
 - d) Sector for improving methods of price regulation
8. Department for Restructuring Management Organization
 - a) Sector for the structure of state management
 - b) Sector for problems of territorial management
 - c) Sector for developing forms of ownership, organizing the base level and democratizing management
 - d) Sector on issues of cooperative activity
9. Department for Economics and Distributive Relations
 - a) Sector for rates and proportions
 - b) Sector for new forms of distributive relations
 - c) Sector of the mechanism of economic operation of priority social programs
 - d) Sector for labor incentives and problems of employment
10. Department for Problems of Management Personnel
 - a) Sector for state service and the apparatus of central organs
 - b) Sector for coordinating the activity of sub-departmental economic organs and academic organizations
 - c) Sector for analyzing new forms and methods of management activity
 - d) Sector for training and skills enhancement for executive personnel in the national economy
11. Academy of the National Economy

INVESTMENT, PRICES, BUDGET, FINANCE

Aganbegyan Suggests 'Cure' for Monetary Overhang

18200459 Moscow PRAVITELSTVENNIY VESTNIK
in Russian No 18, Sep 89 p 5

[Article by A. Aganbegyan: "'Medicine' Against Shortage"]

[Text] How to "tie up" the bulk of available surplus funds with benefit and advantage for the population? I want to draw readers' attention to this key problem.

I will express my basic thought right away. The vast sum of surplus funds available to the population (a minimum of 120 to 150 billion rubles), which was formed during the many years of imbalance and shortage of the consumer market, cannot be covered only through an increase in the production of consumer goods. A rise in their output at best can compensate for the increase in current monetary income.

For example, let us take the plans for 1990. The retail turnover should increase in an unprecedented manner—by 40 billion rubles. But how do matters stand with income? I think that the introduction on October 1 of this year of a

scale of taxation on an increase in the wage fund will limit it to 7 or 8 percent annually. This represents 25 to 30 billion rubles of increase in funds. Furthermore, more than 10 billion rubles are to be allocated for the implementation of centralized measures, primarily for an increase in minimal pensions. Add to this the increase in the earnings of cooperative workers and kolkhoz members and it will become clear that the total income is planned in the amount of about 40 billion rubles. Therefore, with due regard for the surplus funds available to the population the disbalance in the population's monetary income and expenditure will remain at the current year's level. Consequently, again there will be a shortage of goods, an agitated demand, inflation, and an expanding "black market" with unprecedentedly high prices.

Thus, the pivotal problem of normalizing the consumer market lies in "tying up" the population's surplus funds so that they are not used for the purchase of ordinary consumer goods and do not "press" on the market and prices today.

Some important measures were reported by the government at a session of the USSR Supreme Soviet. They include a revision of interest rates on deposits for the purpose of stimulating the population to keep its savings for a long term, issue of loans at quite a high interest,

prepayment for future purchases, and so forth. I believe, however, that this is insufficient. Moreover, a higher interest will require additional funds, which also need material coverage.

I have already expressed the following proposals with some substantiations and calculations: with part of the reduced productive capital investments to annually build 2 million rooms and 3 million garages, to ensure an infrastructure of 3 to 4 million orchard and suburban plots, to expand the construction of resort hotels and rest homes, primarily of the family type, and to issue state certificates for 5 to 6 years ahead with a guarantee that these benefits will be granted to those that purchase these certificates. The same can be done with the issue of similar loans for the future purchase of passenger cars (with due regard for doubling their production during the next 5-year period), video equipment, personal computers, and furniture suites.

Of course, in order to purchase material benefits, for example, in 1990 it is necessary to buy a certificate for the full value and in 1995 it is sufficient to pay, let us say, 50 percent of the value with a payment of the remaining sum during subsequent years. These certificates should be inscribed with the owner's name and the person who buys them should have the right to sell them at any moment to the state with a return of the paid money and deprivation of the right of purchase. For the population this will be a risk-free method of a guaranteed satisfaction of its needs.

According to our calculations, with the indicated measures it is possible "to tie up" 100 to 120 billion rubles of surplus funds from the population, to withdraw them from the usual money turnover, and to weaken the pressure on the consumer market and on the price level.

It is important to stress that the Union government, which controls the entire economic situation in the country, should be the guarantor of these large-scale operations. A partial delegation of some rights to local bodies is also possible.

It is also very important that a worked out and efficient system profitable both for the state and the population replaces the shortage and confusion in providing cooperative housing and the opportunity to buy a passenger car from the state, to build a garage, and to purchase a video tape recorder and a furniture suite.

Such a method of "tying up" the population's funds may seem a formal operation and the shifting of money from one pocket to another only at first glance. Of course, behind all this there should be a real redistribution of resources for improving the well-being of the Soviet people and for increasing housing construction and the output of goods. According to an evaluation, in 1990 this will require approximately 15 billion rubles of capital investments, which, obviously, is much lower than the plans for reducing the volume of productive capital investments.

To be honest, the figure reducing centralized productive capital investments by 30 percent, including in fuel-power and metallurgical complexes, by 40 percent, proposed in the USSR Gosplan report at a session of the USSR Supreme Soviet frightens me. I believe that this can lead to extremely negative consequences—it is impossible to change over from one extreme to another. What such plans mean can be seen, using as an example the organizations of the USSR Ministry of Construction of Petroleum and Gas Industry Enterprises, where for 1990 it is planned to reduce the volume of work to almost one-half, to freeze construction machinery worth almost 3 billion rubles and thousands of kilometers of already purchased pipes, and to leave 76,000 highly skilled workers, primarily welders, without jobs. Later, when they are needed, they will not be found anywhere.

In my opinion, for a financial improvement in the country's economy it is sufficient to reduce productive (primarily centralized) capital investments by 20 percent, although it is extremely complicated to make even such a reduction. In an absolute figure this represents about 20 billion rubles, of which 15 billion are to be allocated for the measures indicated above and the resources envisaged for the remaining 5 billion rubles are to be sold to the population in the form of building materials and builders' services for individual construction.

A wide popularization of the joint-stock form of enterprises and organizations in the USSR is a vast potential on the path of "tying up" the population's funds. The solution of this problem should be speeded up in every possible way so that a stock purchase by workers could become a mass phenomenon as early as 1991 and, perhaps even better, from the second half of 1990. For this, however, a concept of joint-stock enterprise in our country should be thought out and discussed comprehensively and appropriate normative acts should be prepared for their adoption by the USSR Supreme Soviet.

The problem of a wider transition to settlements between enterprises and organizations, on the one hand, and the population, on the other, according to a noncash system by means of checkbooks and credit cards needs a special discussion. Both are based on available accounts of citizens' funds in the bank. Thereby, people are stimulated to reduce the mass of money that they have in their hands. After all, this is the most mobile part of the population's available funds, which disorganizes the trade turnover to the greatest extent and creates an agitated demand. Moreover, the transition to the check system with checkbooks inscribed with the owner's name will sharply hamper the functioning of the "black market."

The transition to the check system of settlements and credit cards abolishes the anonymity of funds, because for ready cash it will be possible to buy only goods in current consumption. However, banks should accept available masses of money of unknown origin with big restrictions. All this will regulate the entire system of monetary settlements and will make it more controlled. The sources of all funds will be well visible. In the future

this will facilitate the transition to a real income tax with due regard for all monetary and material proceeds, which one family or another receives, as is done in all developed countries.

For a fight against the "black market" and observance of the principle of social justice at one time I proposed an extensive development in our country of trade by catalogs, which would include the scarcest durable goods of domestic production and goods purchased with currency. Such an opportunity to buy goods from catalogs could be given to every Soviet family with a limitation of the annual sum of money that could be spent (for example, 600 to 800 rubles per family annually). If a consortium of Soviet and foreign organizations, which carry out trade by catalogs, were established, it would be possible to widely develop joint-stock forms and, with part of the money received from the population, to build enterprises, which would meet the population's most popular demand. Otherwise, imported goods are distributed extremely unevenly. Moreover, their assortment hardly meets the population's real needs.

For now insufficient attention is given to the economic mechanism stimulating in a broad sense enterprises and organizations to produce consumer goods and to provide services. A group of economists headed by Prof. V. D. Belkin put forward an interesting idea on the introduction of special accounts, in which money earned through the sale of goods to the population or the sale of imported goods would be deposited. At first, accessories, raw materials, and supplies for sectors producing consumer goods and then raw materials and supplies for these sectors themselves and so forth would be paid for from these accounts. And so in a number of cycles during several years it would be possible to gradually subordinate the economic structure and state finances to the tasks of meeting the population's effective demand, to strengthen the ruble, to make it uniform, and to raise its purchasing power. It seems to me that it is necessary to closely examine these proposals aimed at the most rapid transition to wholesale trade and normalization of the money turnover.

Thus far we have examined the upper part of the iceberg of the financial imbalance appearing on the consumer market. However, where do the surplus funds available to the population come from? In the final analysis they are determined by the state budget deficit and surplus credit money. Whereas in our country universal attention is now riveted on the budget deficit, only specialists talk about the functioning of credit money. Meanwhile, a significant part of the credits is of an unsubstantiated nature and is not confirmed by calculations of economic efficiency. Interest on many types of credit, obviously, is understated, which leads to surplus credit funds. These funds are an important component of all the expenditures of enterprises and organizations and, in the final analysis, are also assigned for wage payment. Therefore, to regulate the money turnover and to normalize effective demand, it is very important to make credit economically substantiated, for which it is necessary to complete the bank reform and to transform credit into commercial one. For a financial improvement in the

economy it is important at first to systematically pursue a strict credit policy, reducing the amounts of credit not only relatively, but also absolutely, which is equivalent to the withdrawal of part of the surplus funds from enterprises.

Today time is our main limiting resource. In my opinion, there is no time for a lengthy study of problems and their repeated discussion. We must act immediately, not as of the 1990 plan, but literally as of September of this year.

INDUSTRIAL DEVELOPMENT, PERFORMANCE

New Industrial Concerns Attract Press Attention

'Tekhnokhim' Concern Described

18200456 Leningrad *LENINGRADSKAYA PRAVDA*
8 Aug 89 p 1

[Text] Sixteen enterprises and design and production engineering institutes in the city on the Neva have left their four respective ministries to create one of the first Soviet concerns, "Tekhnokhim," which has become a remarkable phenomenon in restructuring the country's economic mechanism. This intersector state association [MGO], with an annual gross output amounting to about 1.5 billion rubles, has a work force of 50,000 today. All the enterprises which are part of it retain full independence.

"Tekhnokhim" is not only a basis for integration of the enterprises that belong to it. It generates bold technical ideas and is vigorous in applying them to production. The resources which previously were credited to ministry budgets are now committed to purposes defined by the concern's board. The MGO "Tekhnokhim" is not setting the task of creating a complex with a self-contained and self-sufficient production technology. The independence of the enterprises belonging to it makes it possible for them to develop their own production capacities, to purchase up-to-date equipment, to enter into various forms of industrial cooperation, and to conclude contracts with foreign trading partners.

'Tekhnokhim's' First Year Assessed

18200456 Moscow *PRAVITELSTVENNIY VESTNIK*
in Russian No 16, Aug 89 pp 4-5

[Article by B. Gidasov, first secretary of the Leningrad Oblast Party Committee, and A. Burman, chief specialist of the Industrial Department of the Administrative Staff of the USSR Council of Ministers: "The Concern: Out From Under the Cozy Roof"]

[Text] The most important organizational achievement in the first stage of perestroyka or miniministries? The first intersector state associations, "Energomash" and "Tekhnokhim," have been in this range of differing and

sometimes opposite assessments. They were created a year ago at the initiative of a group of Leningrad enterprises. Well, a year has now passed, and it is possible to draw the first conclusions, based not on emotions, but on actual experience and practical results. This requires extreme caution, judiciousness, and objectivity in making assessments, since behind the first concerns there is a line of those who would like to try this organizational form. Recently, it has been asserted ever more frequently that the network of MGO's needs to be developed rapidly and they essentially need to be transformed into one of the basic units of the economy. This is an alluring but dangerous direction to take: after all, that could turn the process of creating economic complexes of the new type into just another campaign, and campaigns of that kind, as we all know, frequently amount to nothing more in the end than a change of nameplates.

Let us turn, then, to the experience of one of the first concerns—the MGO “Tekhnokhim”—and try to analyze its results and the problems that have arisen there. Even on the basis of the results of the first 6 months of operation, it was possible to say with confidence that the enterprises' departure from departmental subordination had not had an adverse effect on their viability. And although many skeptics said that the results of operation for the 1st half-year still did not indicate anything, since the machine, as it were, had gathered speed and was carried along by momentum, still the dynamic behavior of the principal indicators of the performance of the MGO over the last half-year seems still more encouraging. We should note, for example, that performance of contractual obligations related to product deliveries is higher there than on the average for the machinebuilding and wood-chemical complexes and considerably higher than in the ministries the enterprises left.

Operation under the new conditions, without the “roof” furnished by the superior organization, has been convincing: it is possible to operate independently, without the administrative-command pressure from above, and to operate successfully.

We should also note another important circumstance: The working conditions of the manager have changed fundamentally. Now that he is free of petty departmental interference, he is able to devote his activity entirely to the interests of the collective and to concern about the end result. There has been a sharp reduction in the instructions received, which previously ran to hundreds of pages. There is practically no need now for the constant and numerous trips to Moscow. The manager has now become someone in his own right, he now has the right to make decisions independently and to take responsibility for the decision made.

Even in the first stage of operation, a different social-psychological climate began to form in the production collectives. Crash efforts and rush work ordered from above have been replaced by an interest in excellent end results because of the economic and social benefits they

afford. The MGO has revealed the ability of enterprises to provide independent and effective solutions not only to current production problems, but also complicated large-scale and long-range problems requiring large financial resources and a joining of the production potential and scientific-technical potential concentrated within the complex itself as well as outside it. All that is needed here is a belief in the soundness of the strategy that has been chosen for solving problems and the realism of the programs that have been drawn up, which are based on the general interest in the end result of all those taking part—from customers to component suppliers.

The concern takes the same approach to performance not only of production and scientific-technical programs, but also social welfare programs. For instance, ways of solving the housing problem have been found in an unusually short period of time. The “Housing 2000” program, drafted by “Tekhnokhim,” for all practical purposes guarantees that all workers of the association's enterprises in Leningrad and the oblast will receive apartments if they need them during the period 1993-1997, and after that they will be supplied according to need, not on a first-come, first-served basis.

At the same time, the experience of “Tekhnokhim” has highlighted the need to make significant adjustments in the economic mechanism that is now in effect. The MGO's initial position is defined simply: the enterprises compile the plan for socioeconomic development independently, on the basis of horizontal ties with customers (economic contracts). This part of the association's activity is not to be regulated by state administrative authorities. The mutual obligations of the parties are guaranteed by direct contracts.

Accordingly, at the state level of management USSR Gosplan is not to figure as the owner of the state order, since then equal bilateral relations and mutual economic liability would not be achieved. A change in the procedure for drawing up the state order is proposed: Gosplan arrives at its contents according to recommendations of consumers and on the basis of evident priorities, and the functions of handling the state order are delegated to consumer ministries. They are allocated the necessary resources, which are earmarked, including financial resources. The ministries which have the power to place the state order conclude bilateral contracts with the enterprises of the intersector association.

In the proposed system, oversight over the distribution and sale of that portion of output would be exercised along the chain consisting of Gosplan, the ministry, and the customer. This creates the possibility of renouncing altogether regulation of the MGO's activity at the level of USSR Gosplan.

As for limit-allowances (of stocks) for material and technical resources and limit-allowances on capital investments and contract work, the following is proposed. The first step would be for USSR Gosplan to

present to USSR Gosplan and wholesale trade limit-allowances (stocks) reflecting the needs of the MGO for the list of resources they distribute on a centralized basis. No privileges whatsoever, only the limit-allowances envisaged by 5-year plans, which are protected at the instant they are presented! This is an extremely important step, since the line about the MGO being the holder of the stocks is being omitted from the products list of USSR Gosplan.

The next step which the MGO's are proposing to take consists of organizing integrated material and technical supply of enterprises, including capital construction, through regional supply-and-sales components. In this case, once it has taken possession of the resources distributed by USSR Gosplan, USSR Gosplan becomes for all practical purposes the full-fledged owner of the entire list of resources to be distributed.

When the operation is organized in this way, enterprises independently order resources directly through the regional components. There is no longer a need for them to be distributed at the level of the MGO, which means that the preconditions do not exist for going back to the administrative-command methods of management, and there is no need to create within the association an elaborate service for material and technical supply. Yet another exceedingly important problem is solved at the same time—the MGO no longer even needs limit-allowances of capital investments; after all, USSR Gosplan is not allocating resources to the association. All supply goes through a single department—USSR Gosplan. Relations among construction contractors and client enterprises within the region are in turn organized mostly on the basis of direct ties.

The experience of the MGO leads to the following conclusions: reference figures are not essentially a planning, forecasting, or management tool, and should be abolished, along with the assignment of limit-allowances on the size of the labor force. This makes it possible not only to eliminate superfluous amounts of information and optimize the organization of activity at the levels of management represented by the state and the economy, but also to cut back on staff.

The concern's fundamentally new economic mechanism will thereby be concentrated on full economic independence and accountability of the complex formed, on demarcation of management functions between the state and the economy, and on setting in motion the principles of market relations.

Unfortunately, the observation must be made that USSR Gosplan and especially USSR Gosplan have still not adopted the new attitude toward organizing the effort. They are structuring relations with the MGO by simple analogy with the branch ministries, not taking into account the specific nature of the associations being created and of the tasks they confront. There is a danger, then, that the associations that have been created will essentially be turned into entities serving as alternatives

to the ministries. In that case, the attempt to create economic complexes of the new type loses its meaning.

Only after these issues are worked on and resolved will it be possible to accomplish further development of the network of economic complexes of the MGO type. Only under this condition can the activity of the new Soviet concerns signify a real breakthrough into the future.

Party's Role in Concerns Questioned

18200456 Moscow *SOTSIALISTICHESKAYA INDUSTRIYA* in Russian 3 Sep 89 p 2

[Article by M. Rostarchuk, Leningrad: "Even Though the Footing Is New..."]

[Text] The first three Soviet concerns have proved to be little islands of the alternative economy in the sea of the command-administrative system. They were born in a difficult organizational labor, they have had a hard time slipping and sliding in the old ruts of finance and supply, and they have gotten on their feet in an alien economic environment—which *SOTSIALISTICHESKAYA INDUSTRIYA* has already written about.

The very first to escape the clutches of the ministries were 34 Leningrad enterprises, associations, and organizations, which last summer formed the concerns "Tekhnokhim" and "Energomash."

What role have primary party organizations played in their birth and development? We are taking "Energomash" as an example in our attempt to answer that question.

It would seem that this role must be determined by the objective conditions. First, the economic situation of the enterprises becoming part of the concern has not undergone radical change: a very difficult evolution is taking place, the members of the MGO are adjusting, and real internal industrial cooperation within the concern is still just a dream. The financial situation was difficult in the 1st and 2d quarters. There was a strain in building up the centralized stock, which would have opened up the possibility of maneuvering: there are still ongoing disputes about the size of deductions. Nor have the functions and rights of the concern's board and of its executive directorate been entirely defined—there are evidently many things which still have to be clarified.

Those are some of the internal difficulties. But the external range of problems is equally serious. And the main one is material and technical supply. After all, in the absence of a wholesale market for machines and equipment and raw materials, "Energomash" will during this year and next year still be "on the hook" to Gosplan and Gosplan and ministries, just as it was in the past. And they are still operating in the old way. They are stubborn in their reluctance to deal with any member of the concern separately, but are constantly striving, without prior authorization, to turn the executive directorate of the MGO into a kind of miniministry.

What is more, because the public has a negative attitude toward nuclear power plants, there are no orders for this type of power plant in the MGO's portfolio, and the management of the concern and the associations making it up have had to urgently seek out new customers within the country and abroad.

Then problems peculiar to the party must be added to these problems. Just as in a majority of party organizations, the old stereotypes are slowly but surely being broken up under the pressure of life in the primary party organizations of the MGO. Members of party committees are still just learning to respond to the sharpest questions asked by rank-and-file party members.

And for many of them the concern remains a kind of economic black box. After all, when they "made a mess of it," A. Yegorov, secretary of the "Elektrosila" Party Committee, recalls, and as usual hurried to agree before the opening of the 19th All-Union Party Conference, they plainly did not go to the workers. Indeed, even today, Aleksandr Nikolayevich emphasizes, the working class still does not feel that its plant, association, or shop are operating as part of the MGO, just as it does not see advantages as yet, nor any new turn of events, nor is it motivated to adopt a fundamentally different approach to its work.

This is also the opinion of V. Vasilyev, secretary of the Party Committee of the "Nevskiy Zavod" PO. Just as before, party organizations are today concentrating on the concerns of their own work collectives. And for the moment it is not clear how the advantages of operating within the framework of the concern can be realized for them, we feel this even today.

These are the conditions confronted by the council of secretaries of primary party organizations which was created in the concern last year and is headed by its chairman V. Kondratyev, secretary of the LMZ Party Committee.

In the months that have passed, the council has already singled out a number of problems for itself and has undertaken to solve some of them. This one, for example. Since work collectives have a very approximate idea about one another, the large-circulation newspapers are capable of helping to bring their interests closer together. A council of editors was created, pages covering the concern's affairs began to appear regularly in the large-circulation papers, and the editorial staffs of the newspapers of the associations and enterprises took turns preparing them. The idea has also been discussed of creating one joint newspaper, but fears of not collecting the necessary number of subscribers prevailed, although actually just such a joint organ might play the role of a collective organizer.

The efforts of members of the MGO were coordinated on the initiative of the council of secretaries in the training of university-level technical and management personnel in view of the fact that the LMZ has its own VTUZ and there is a good school for managers operating at the

Izhora Plant. But on the whole, the council's desire to take an active part in personnel appointments remains only a fond wish, which gives rise to the legitimate question: Where, then, is the evidence of party influence on shaping the management nucleus of the MGO?

The council of secretaries has adopted the course that the sphere of social and everyday services would develop through the joint efforts of the collectives of "Energomash." Together with a second Leningrad concern, "Tekhnokhim," the decision was made to purchase abroad on the basis of stock ownership an automated housing construction combine, and in the next several years the concerns will be putting housing construction on an industrial footing.

The council of secretaries includes among urgent political tasks the joint preparation of party organizations of the MGO for the upcoming elections to local soviets. There are 100,000 persons working in the concern, and with their families they represent 350,000-400,000 inhabitants of Leningrad. Why not organize the collective drafting of a general platform on which candidates to be deputies to local soviets might stand (with appreciation, of course, for the opinions and desires of people living within the respective election districts)? In our time, this is not an idle question—the upcoming election battles promise to be quite fierce, support groups of informal public organizations and movements, which are already operating actively in work collectives and with which a constructive dialogue must be worked out, will be taking part in them. The people in the council of secretaries understand quite well that these elections will be a new test for the party.

Some things, as we see, have been done. But has the council become a true political staff headquarters? The commonplaces and mere declarations are evident in the regulation on its operation. One feels that it still does not have a conception or clear program.

Take, for example, the function of coordinating the efforts of party organizations of the MGO with respect to prompt and sound manufacturing of products, which is stipulated in the regulation. But already it is fully obvious that quality and the meeting of delivery deadlines are guaranteed by economic measures, not by the petty meddling or shouting from party committees. Second, until there is true internal industrial cooperation and interdependence within the concern, there will be no "coordination of efforts" either.

The document contains quite a few phrasings like "guarantee and promote," "analyze and summarize."... But these are all ordinary tasks, party committees have performed them and will be performing them on a routine basis. But where is the specific nature and special role of the council of secretaries itself? Where is the long-term view? Where is the ideological support for the concern's evolution as a promising alternative form for organizing industrial production?

One of the answers to these by no means simple questions has been offered by V. Kondratyev, chairman of the council and secretary of the LMZ Party Committee: The managers of the MGO still have not sensed where and in what respect they can and need to rely on the council; it seems to be functioning all to itself, outside the sphere of activity of the board and of the executive directorate. For the present, there still has been no demand for the collective intelligence of the concern's party organization.

And one more reason. We spoke about it with Yu. Ivanov, secretary of the Party Committee of the "Izhorskiy Zavod" Association.

"If party life is to be invigorated in the primary organizations, it has to be democratized in most urgent fashion. And that requires above all that the primary organization be given freedom as to its finances and its staff structure. But up to now we have been 'bound and tied' to the raykom and gorkom in deciding all matters of any importance whatsoever, and our work has been regulated by hundreds of instructions. How can that do when I as secretary of the party committee cannot dispose of the resources which are at our disposition, cannot form my own full-time party staff, which we need in our particular situation? I cannot recruit sociologists, political economists, philosophers, and psychologists to analyze on a scientific basis the social and political processes taking place in the collective."

Here, Yu. Ivanov was probably being a bit playful. Even now, the Party Committee of "Izhorskiy Zavod" can rely on the objective data of a sociological survey performed by the department for the ideological effort of the Social Sciences Academy of the CPSU Central Committee. The data are all the more interesting and indicative in that they reflected changes in the public opinion of the workers of the association over the period when "Izhorskiy Zavod" was still in the iron ring of the ministry and over more than half a year after that, when it entered the concern and gained economic freedom. Thus, the survey indicates that one out of every four of the plant's workers does not believe in the success of the economic reform if it is conducted at the present pace, and a majority of the plant's workers and specialists does not anticipate rapid constructive changes in the near future.

The change in "Izhora's" status greatly advocated the dissatisfaction of the workers with the state of affairs at the enterprise. The plant's transition to the new status, they feel, was to a considerable extent a formality. With greater politicization, there has also been more intense satisfaction with the persistent alienation of the workers from the means of production and with the lack of mutual alignment of personal, collective, and nationwide economic interests.

So far, in the opinion of a majority of the workers, the idea of the concern has still not borne real fruit. All management entities still suffer from the disease of

deafness to the opinion of rank-and-file workers. Which explains the growing tension in social and production relations, the increase in the number of all kinds of initiative groups operating parallel to the official management bodies.

The results of the study of public opinion concerning party-political support for the economic reform are indicative. The "Izhora" people, just like members of other work collectives which have been surveyed, believe that social energy is still being extinguished by attempts to fill the new forms and methods of management with the old content. Party organizations are continuing to duplicate the functions of economic entities. Half of the decrees of the party committee and work plans are general and declarative in nature. The new problems of economic life, what is really disturbing people, are rarely at the center of attention of party organizations. The subjective attitude of CPSU members toward the economic reform and their real behavior are actually just the same as those of nonmembers. Party committees and their leaders have become accustomed to operating in a stereotyped way, they get lost in nonstandard situations, and sometimes they deliberately avoid resolving acute issues. Not only has the gap between words and deeds not been closed, it has even widened.

A single conclusion is inevitable: the transition to the new economic footing has still not awakened the initiative of the masses; the human factor still has not been activated. Consequently, the party organization of "Izhora" and the council of the concern's secretaries have an area in which work has not started and which has to be handled in a completely new way.

After all, if we look at the roots, the concern is the embodiment of high-level policy at the level of enterprises and associations. When the Leningrad Oblast Party Committee initiated and promoted the idea of the MGO through all channels, it put in concrete terms the party's policy and strategy to a certain level. The further embodiment of that initiative, at the grass roots level, as the English say, must be the job of the collective intelligence of the party organizations of the members of the MGO and of its brain center, the council of secretaries.

The evolution of concerns under present realistic and extremely complicated conditions is, of course, a large-scale task. But for the party committee and council of secretaries this is in fact everyday political work. This is also the translation of the party's course into practical action. That is exactly what is meant by concrete ideological support for perestroika. There will be no instructions from above at every step. That means that every party organization in particular in the council of secretaries as a whole, proceeding from the general tasks, must work out its program over the near and more distant future—precisely its own program, a program that responds to the specific conditions of the enterprise, the association, and the concern.

The large problems need to be conceptualized even now and resolved with forward-looking methods, experimental methods if that is suitable. These include the development of self-management, the idea of which is embodied in the workers' council, but for various reasons is still far from realization at present. It also includes democratization of production relations, and one of the important ways of doing that is through redistribution of the right of ownership to the means of production. That is when the workers feel themselves to be the real bosses of their plant and enterprises, that is when they are truly interested in authentic industrial cooperation and integration within the framework of the concern, that is when they begin to think about its development and future. That is also when it is possible to shape corporate thinking that the concern needs so badly. To be sure, group egoism is also capable of developing under those conditions. It is also the business of the party committee and council of secretaries to manage those processes.

Otherwise, they will be trailing behind events.

Gas Industry Concern Founded

18200456 Moscow *PRAVITELSTVENNYY VESTNIK*
in Russian No 17, Aug 89 p 9

[Article by V. Yurteyev: "Birth of a Concern"]

[Text] Even yesterday, we addressed all questions related to gasification and gas supply of consumers of the country's cities and rural areas and application of compressed and liquefied gas as a motor fuel to the USSR Ministry of Gas Industry. Now, these problems will be taken over by the state concern "Gazprom," created at the initiative of work collectives of the gas industry, whose proposal was supported by the USSR Council of Ministers.

What are the differences between the former ministry and the concern, and what kind of structure does it have as an economic organization?

Operating on the basis of the state order, reference figures, economic standards, and limit-allowances, the concern has been given an instrument for flexible planning of gas production and delivery by quarters and for the year as a whole on the basis of the realistic requirements of regions and individual consumers.

Calculations of economists show that the concern's formation will make it possible to solve a complicated problem related to the transition to taxation of profit in the next 5-year planning period. After all, individual enterprises engaged in the production, processing, and transport of gas are deprived of the opportunity of guaranteeing stability of payments into the budget because of the changing natural conditions, and only the concern will be able to pay taxes to the state in guaranteed fashion.

This is an important circumstance for both groups of enterprises in "Gazprom." Enterprises in the first group, which directly support operation of the unified gas

supply system (YeSG) of the USSR and have become part of the concern, do not have the right to withdraw freely from it. Such enterprises (for instance, the production associations "Ukrgezprom" and "Tyumentransgaz," the NPO "Soyuzgazavtomatika," and others) are being made responsible for fulfilling the plans for production and capital construction, for reliability of the technological process at minimum expenditure of resources. Relations with them will be structured on the basis of calculated prices which the concern arrives at in view of the unaltered gas prices for consumers. But the concern will be liable to the full extent of its property for the end results of the activity of these enterprises.

And then the enterprises in the second group, which are joining the concern voluntarily, may freely leave it if they consider that necessary. These are construction and repair organizations, scientific-production and machine-building associations, design and research organizations, as well as associations operating in gas fields that are not part of the YeSG. Relations between these enterprises and the concerns will be defined in a contract concluded between them, which as a rule shall extend for a term of 5 years. The concern is not liable for the obligations of these enterprises, and the enterprises are liable for the obligations of the concern only insofar as they are carrying on joint activity.

The enterprises of "Gazprom" can form intereconomic (mezhhkhozyaystvennyye) associations (enterprises) among themselves and with enterprises of other branches, they may enter into alliances and associations of consumers and producers without consent of the management entities of "Gazprom." The concern itself will interact directly with all central economic authorities, the councils of ministers of union republics, and the USSR Council of Ministers.

The concern's council is the supreme management body of "Gazprom." A few days ago, the first session of the council was held, and the concern's board and its chairman were elected. The concern's work staff will be substantially smaller than that of the ministry.

The functions of state oversight over the activity of the concern "Gazprom" has been entrusted to the Bureau for the Fuel and Energy Complex of the USSR Council of Ministers.

REGIONAL DEVELOPMENT

Methods of Calculating Regional Economic Differences Disputed

National Income Analyzed by Region

18200455 Moscow *EKONOMICHESKAYA GAZETA* in Russian No 34, Aug 89 p 6

[Article by B. Plyshevskiy, Doctor of Economic Sciences: "Union Republics: Readiness for Economic Accountability"]

[Text] The heated debate on republic-wide economic accountability continues to rage. New questions continue to arise as practical problems associated with preparations for the shift to self-financing are being solved. Until recently, passions raged around the issue of identifying what should remain the responsibility of the union and what should pass to the union republics; now, economic measures of regional economic accountability have come to the fore. How to define self-sufficiency? How to determine whether an entity is ready to switch to the new system? Should entitlements and subsidies to certain regions be preserved, and if so, how the exact amounts and terms of such subsidies should be set? Everyone is also concerned with the following question: will regional economic accountability put the economy firmly on the road to improvement and steady economic growth? Different positions on these issues have emerged, and consequently we need to analyze in depth pressing problems of regional economic accountability and economic data in order to identify trends in economic development.

Main concepts of regional economic accountability were developed in a climate of intensifying economic difficulties which affected, in one way or another, all union republics. Documents of the 27th CPSU Congress and the 19th Party Conference described the economic situation as pre-crisis, but the first USSR Congress of People's Deputies called it a crisis. This is a crucial factor impacting the implementation of the regional economic accountability program. The priority task is not only to keep existing negative trends from being exacerbated by the introduction of economic accountability, but to reverse them.

With this in mind, let us look at national income production, a very comprehensive measure of economic and social development.

For the USSR as a whole, in the first three years of the 12th five-year plan the average annual growth rate of national income, at 3.6 percent, was the same in the previous five-year plan. In the largest republics, the RSFSR and the UkSSR, which have a decisive impact on the overall economy, national income growth rates have increased. Unlike the three previous five-year periods, when a decelerating trend was prevalent, a number of republics achieved higher economic growth rates in 1986-88. During this period, 8 republics posted faster national income growth rates, with 5 republics (the KaSSR, the LiSSR, the MoSSR, the TaSSR and the TuSSR) raising their growth rates by at least one third. In the remaining seven republics, however, national income growth has slowed, especially in Georgia and Armenia, 3 to 5 times, and in Uzbekistan, by one third.

In other words, stable overall growth rates conceal divergent trends of accelerating and decelerating rates for different groups of union republics.

In a majority of republics, as in the nation as a whole, 1988 results were better than the average for 1986-88. However, during this period most results fell short of the

rates required by the five-year plan. Only four union republics, the UkSSR, the BeSSR, the LiSSR and the TuSSR, achieved the targets set by the plan for national income levels. The KaSSR and the UzSSR lagged behind considerably, more than two times, with ArSSR and GeSSR bringing up the rear.

This means that most union republics will have to start regional economic accountability with smaller resources for economic and social development than envisioned by the five-year plan, only a little more than what was available at the same point of the 11th five-year plan.

The shift to republic-wide economic accountability has been rendered considerably more difficult by the worsening of the economic situation this year. In the first six months of 1989, the national income growth rate has been halved compared to last year's results for the country as a whole and for the RSFSR; nine union republics, including the Baltic republics, have posted lower growth rates. Only four republics—the UkSSR, the BeSSR, the UzSSR and the MoSSR—finished the six-month period with a significant increase in their economic development rates.

Naturally, the national income growth rate is not the only factor determining the self-sufficiency and self-financing of the union republics. Furthermore, growth rates can not be analyzed in isolation from structural changes in the republics' economies, such as the shift from military to civilian production, redistribution of funds in favor of industries producing consumer goods and providing social services and reorientation of economic growth to use mainly efficiency factors. Still, the decline of economic growth is not welcome news, especially given the growth of inflationary trends since the middle of last year. In the first six months of 1989, wages outpaced national income measured in comparable prices 3.8 times, and profits 3 times. For the past 12 months, those numbers were 1.36 times and 2.3 times, respectively.

Another important point should be made, as it is the cause of differences among republics as far as their readiness to implement the principles of regional economic accountability is concerned. Current national income growth rates are insufficient to erase differences among union republics in the level of their economic development. Until the mid-1970s, differences in national income production among them were narrowing on a per capita basis. In the subsequent period, due to a slowdown in economic growth, this process stopped and a trend toward wider differences emerged.

In the 1980s, three groups of union republics can be identified based on their per capita national income production. There are those which consistently surpass the national average (they include the RSFSR, Belorussia and the Baltic republics); those which are generally close to average (the Ukraine, Moldavia and the Trans-Caucasian republics); and those which fall considerably short of the average (Kazakhstan and the

Central Asian republics). While those in the middle group have moved closer to the national average, those in the third group have fallen further behind.

This has been primarily caused by objective processes, especially by differences in the growth of production efficiency and divergent trends in the size and makeup of population. In the European republics, the share of the working age population is higher, while the rate of natural increase is lower; in Central Asia, on the other hand, we have the highest rate of population growth in the country and, due to a very high number of children, the smallest ratio of workforce to total population.

In addition, differences in economic structure and specialization of union republics have been extremely important, especially different ratios of raw materials-producing industries, such as extracting industries, metallurgy and agriculture, to manufacturing industries, such as machine-building, light industry and the food industry, as well as a shift in relative prices for raw materials, semi-finished goods and finished goods. As a result, republics where manufacturing is dominant have an advantage over those which specialize in raw materials-related industries.

Thanks to the centralized redistribution of national income, differences among union republics in per capita national income production were evened out. Economically more developed republics such as the RSFSR, Belorussia and the Ukraine give part of the national

income produced on their territory to subsidize economic development and provide social services in republics where per capita national income is smaller. In 1985, for instance, the UkSSR produced 9 percent less national income than the national average on a per capita basis, but consumed 12 percent less. The BeSSR produced 9 percent more than average and consumed 4 percent less. At the same time, per capita national income production in the UzSSR was only 58 percent of the national average, while consumption was 61 percent of the average. In the KaSSR those numbers were 77 percent and 96 percent, respectively. At the turn of this decade, the Trans-Caucasian republics began to contribute a small portion of their national income while the Baltic republics became net recipients.

After switching to republic-wide economic accountability, the ability to redistribute resources centrally will naturally shrink. This will require union republics to be more responsible in fulfilling economic and social growth plans which they set and in raising production efficiency. Meanwhile, given the differences in per capita national income production, some redistribution should be retained. However, assistance to individual republics from the union government should be made more economically effective: its goals, duration and terms must be more rigorously set and in certain cases direct transfers should be replaced by credits. Naturally, no assistance should be given to make up for losses that are due to mismanagement, lower efficiency and ineffective management.

National Income Growth Rates, Percent per Annum

Republics	1981-85	1986-88	1988	1989(6 mos)
USSR	3.6	3.6	4.4	2.5
RSFSR	3.4	3.5	4.3	2.4
UkSSR	3.7	3.9	3.8	4.5
BeSSR	5.6	4.7	3.2	5.3
UzSSR	3.4	2.1	5.1	5.5
KaSSR	1.3	1.9	2.6	2.5
GeSSR	4.9	1.0	4.5	1.7
AzSSR	4.8	3.3	1.6	1.3
LiSSR	4.7	6.5	5.3	3.6
MoSSR	3.3	4.5	3.1	6.1
LaSSR	3.7	4.0	4.0	3.4
KiSSR	4.3	3.5	5.9	6.0
TaSSR	2.9	3.9	8.2	2.9
ArSSR	5.8	1.6	0.1	0.8
TuSSR	2.5	4.3	4.3	2.9
EsSSR	3.2	3.0	4.0	3.2

Per Capita National Income Production and Consumption, Percent (Actual Prices)

Republic	Production		Consumption	
	1980	1985	1980	1985
USSR	100	100	100	100
RSFSR	113	115	114	115
UkSSR	89	91	87	88
BeSSR	110	113	95	96
UzSSR	63	58	68	61
KaSSR	79	77	93	96
GeSSR	91	99	90	97
AzSSR	85	83	65	66
LiSSR	98	103	108	109
MoSSR	85	82	82	80
LaSSR	131	127	122	126
KiSSR	59	58	68	65
TaSSR	56	50	61	56
ArSSR	96	93	82	83
TuSSR	70	66	67	70
EsSSR	125	121	130	130

More Indicators Needed

18200455 Moscow *EKONOMICHESKAYA GAZETA* in Russian No 35, Aug 89 p 4

[Article by B. Plyshevskiy, Doctor of Economic Sciences: "Self-Sufficiency and Inter-Republic Commerce"]

[Text] The difference between regional economic accountability and economic accountability at an enterprise or a complex is that the latter are self-contained systems able to match their expenses and revenues exactly. Should we insist that expenditures of a given region or a union republic be always and at all times covered by its revenues? I do not think so. This requirement, appropriate though it may be for the economy of the country as a whole, allows exceptions starting at the level of the individual enterprise. In particular, subsidies in one form or another are necessary to labor collectives employed in extracting industries and agriculture, where large swings in profitability of operations are the result of natural conditions.

The scope for self-sufficiency is even more constrained at the level of republics, krays and oblasts. For instance, in 1988, as part of the redistribution process, the BeSSR transferred R1 billion of its national income, but half of its rayons failed to cover their expenses with their own revenues. This is the result of unequal distribution of population and industry. Every rayon must make expenditures on social services. However, the ability to cover these expenditures using profits of enterprises located on its territory differs widely. Only through redistribution can the differences be made up.

Even in its theoretical form, economic accountability applied to union republics must include, along with the principle of self-sufficiency, a system of providing assistance (in the form of subsidies, entitlements and preferences) to regions which for objective reasons lag behind in their economic and social development. Otherwise the nation's economy will not be a single system where all territorial components interact to attain common goals, including that of raising socially and economically less developed regions to the level of the country as a whole.

Such assistance has always been provided by the Soviet state to different regions, and it should be retained in the future. However, it should be restructured based on contemporary regional policy.

The principle of self-sufficiency of union republics should be amended by the principle of mutual assistance, not to equalize incomes turning some into parasites, but based on economic principles, as a manifestation of the internationalist principles underlying policies of the Soviet state.

We should not forget another important aspect of this problem. In some union republics, major industrial development programs are often carried out which have union-level importance. The development of the mining industry and agriculture in the KaSSR has been undertaken in the interests of the entire country, which is why investments into these sectors have been made by the center using funds from the federal budget. This is the main reason why every year that republic consumes R5 billion, or 20 percent, more than its own national income. It would be a mistake, however, to conclude that it lives off others and is not ready to switch to economic accountability. All falls into place once the missing link

is introduced, i.e., a system of economically based subsidies to support promising programs which have union-wide significance.

Furthermore, the CPSU Program for the upcoming Central Committee plenum on interethnic relations correctly states that all republics contribute to the all-union fund created to support economically less developed regions and those which are affected by natural and ecological disasters, as well as to develop new territories.

The task of finding a practical solution to the problem of regional economic accountability is hampered by the lack of analytical methodology. This is seen when one issue is substituted for another and attempts are made to find a solution using a single economic variable instead of applying it in conjunction with other, equally important ones. Each measure can be applied to no more than one area.

Even in scientific studies, not to mention public opinion, assistance has become synonymous with parasitism and poor work. As a result, real economic problems inherent in the shift to regional economic accountability have come under suspicion.

On the other hand, debate surrounds the very use of the term "self-sufficiency." Some people even object to raising the issue whether a given region is a producing or a consuming one.

The task of assessing each republic's and oblast's contribution to the overall national economic system, what it produces and what it gets, was spelled out by the 19th All-Union Party Conference's resolution "On Interethnic Relations" and there is no reason to rescind it.

In particular, objections to the principle of self-sufficiency based on lack of reliable statistical data do not seem convincing. Those who express such objections point out that the methodology of accounting is flawed and results are influenced by structural and price-setting factors. Data on general economic balances for union republics is necessary for the task and the methodology of computing such balances must be improved. This is what the USSR State Committee on Statistics has been engaged in, based on recommendations of science and international experience.

To find a scientific solution to the problems of republic-wide economic accountability, we need such data as national income, imports and exports, contributions to the union budget and transfers of union funds expressed in actual prices. There is no compelling reason to reject these indicators and replace them with calculations based on various abstract prices. Without data expressed in actual prices it would be impossible to develop a structure of regional economic accountability and to prepare proposals for restructuring the economies of the union republics, rationalizing their economic ties and improving the price-setting mechanism. The use of abstract prices is legitimate, but only as a form of supplemental analysis.

On the other hand, it is not acceptable to discuss problems of regional economic accountability using just one indicator, since it may lead to faulty conclusions. This has happened, for instance, in the case of data on inter-republic commerce and its interpretation which is often used to assess a republic's readiness to become self-sufficient.

Since the 1970s, data on exports and imports of union republics has been calculated using inter-industry production accounts and distribution of goods and services. The latest available data is for 1987, and it suggests that in a number of republics imports are greater than exports, while in a number of others it is the other way around. Until recently, this fact was never the cause for debate as it was seen as a reflection of the existing territorial division of labor and industrial specialization of different economic regions. However, ahead of the shift to economic accountability, data on inter-republic commerce expressed in prices used in the internal market has been used to assess the degree of self-sufficiency of union republics. This approach, however, is flawed, since the issue of self-sufficiency cannot be decided by using data on commerce alone.

For instance, let us look at the following situation. A republic may import more than it exports but thanks to advantages of the inter-union and international division of labor it may also produce a larger national income than it consumes. Or let us take another extreme. A republic may export more than it imports and provide for its needs mainly from its own production, but at the same time it may still consume more than it produces. These examples suggest that there is no significant relationship between production data and inter-republic commerce.

Exports and imports are comprised of two parts: inter-republic and foreign trade, the ratio of which is 6 to 4. Their impact on the overall balance of trade is different, something which is often disregarded. In inter-republic trade, total imports and exports must be equal. Exports are greater than imports in the RSFSR, the UkSSR, the BeSSR, the ArSSR, the AzSSR, the GeSSR and the MoSSR. These republics produce more than they consume. Incidentally, this is related not only to the surplus in inter-republic trade and highly efficient production of export goods, but in a large measure also to certain structural characteristics.

Eight union republic run deficits in inter-republic trade: the KaSSR, the Central Asian republics and the Baltic republics.

The picture is difficult in foreign trade. Unlike inter-republic trade, foreign exports and imports usually are not equal. The USSR foreign trade balance, expressed in world prices, is positive and equals R8 billion. However, in computing gross national product (GNP), imports and exports are expressed in domestic, not international, prices.

Since our imports contain a large share of consumer goods, and their retail prices are usually much higher than those prevailing in world markets, imports expressed in domestic prices exceed exports by tens of billions of rubles. In accordance with the existing methodology, this deficit is divided among the union republics in proportion to their national income production. As a result, the total trade balance is positive only in two republics, the BeSSR and AzSSR. This solution is to an extent arbitrary, but not so much as to fundamentally alter the character of conclusions whether or not a republic can function under the conditions of economic accountability.

Economists in the Baltic republics also point out flaws in statistics covering inter-republic trade which stem from undercounting of consumer goods purchased by visitors and from artificially low prices for cattle industry products ceded to the union distribution system. Existing data on which the existing methodology is based does not allow us to take these factors into account; plus, to a degree, the same processes affect the performance of other republics, as well. As a rule, purchases by visitors are not subtracted from the overall volume of retail trade in other countries, either. As to subsidies for agricultural products, they are paid out from the union budget not to producers but to consumers.

Certain corrections are necessary to achieve a better understanding of trade issues. They do not, however, change the essence of the question. Even when its trade balance is negative, it does not mean that a territory should not switch to economic accountability or that it is inefficient.

This year, the State Committee on Statistics recalculated republic trade figures in world prices. If we were to switch to world prices, revenues of republics exporting fuel, raw materials and high-tech machinery would rise while those of exporters of consumer goods and other finished products would decline. Everywhere, spending would rise on fuel, raw materials, semifinished goods and outsourced units—in other words, on all types of intermediate products. The RSFSR, for instance, would get an additional R70 billion. As to the Baltic republics, their negative trade balances not only would not disappear but would widen further.

What is the connection between data on external trade and redistribution of national income? It would be jejune to represent the discrepancy between such data as statistical fiction or a result of methodological flaws in calculations. It stems from objective factors, related to the impact of trade on all GNP components. National income makes up some 40 percent of GNP. Interregional trade, therefore, greatly impacts investment patterns and, through them, the dynamics of GNP growth.

The balance of national income redistribution depends on the ratio of utilization of the republic's imports in two

categories: first, to replace and repair capital and replace used fuel, energy and raw materials and, second, for consumption and savings.

If imports are mostly used to cover ongoing production expenditures, the investment fund increases. In this case, the gap between consumption of national income and production widens. On the other hand, if the share of investment funds in imports falls, the two are equalized and a surplus in national income production can even be achieved.

Consequently, we must not strive to balance the republics' trade. When switching to regional self-sufficiency, it is more important to use the advantages of the regional division of labor to reduce the materials intensiveness of production and increase exports of finished goods, which would help national income to rise faster.

Thus, self-sufficiency of the union republics will be achieved not by reducing their industrial specialization and cutting back on interregional trade but by using imports more efficiently. Wherever it is useful, imports should be replaced by local products and increased domestic production.

However, the means of achieving self-sufficiency, especially for smaller republics, is to reduce the materials intensiveness of their output, in particular by economizing on imported materials, while at the same time boosting exports of the output of their processing industries to other regions of the country and abroad. Economic accountability in union republics and autarchy are incompatible.

Another example exposing the weakness of the theory is the attempt to assess self-sufficiency of union republics by using data on their fiscal balances vis-a-vis the federal budget. Some point out, for instance, that enterprises of the Baltic republics contribute more to the union budget than they get back. Does this uncontested fact not prove that the republics are self-sufficient?

It is one thing when this indicator is used in conjunction with other ones, especially with the above-mentioned ratios of production and consumption of national income and trade balances; it is another matter when it is pushed to the fore and used to cast doubt on other, less favorable statistics. In addition, the surplus in the republics' accounts vis-a-vis the union budget cannot be correctly understood without looking at the revenue base of the union budget, especially in light of the large sums collected in these republics in value-added tax on the output of light industry and the machine-building industry. The cause of this is, in a large measure, the high value-added coefficient in these industries, which receive agricultural commodities and raw materials produced in other republics at relatively low prices.

Thus, while assessing problems of regional self-sufficiency and economic accountability, an entire system of interconnected indicators must be used. Using

one measure leads to one-sided and distorted conclusions. The most important indicator in this system is, in our view, the ratio of production to consumption of national income. All other measures should be seen as supplemental. However, even republics consuming more national income than they produce should still shift to regional economic accountability. The condition they must meet is to be able to pay for the development of the economy under local authorities' control and for programs

to raise the living standard of the population with the republic's own funds.

It is clear that problems of regional economic accountability must be studied by academic organizations, which, together with central economic authorities, must also come up with a set of methodological recommendations on how to apply economic accountability under the conditions of a new management system.

AGRO-ECONOMICS, POLICY, ORGANIZATION

State Commission for Food, Procurement Profiled

18240242 Moscow PRAVITELSTVENNYY VESTNIK
in Russian No 17, Aug 89 p 6

[Editorial on formation of new State Commission for Food and Procurement: "Commission Begins Work"]

[Text] By decision of the country's government, a new body has been formed—the State Commission of the USSR Council of Ministers for Food and Procurement. Today, the editorial board tells readers about the structure of the State Commission and the tasks it is to carry out.

Composition. The composition of the commission includes two first deputy chairmen and four deputies who will oversee such structural subdivisions as the Main Scientific and Technical Administration, the Main Administration of Foreign Economic Ties, the Department of Long-Term Development of the Food-Processing Industry and the Fish Industry, and the Department of Economic Analysis and Interbranch Proportions. The commission also includes representatives from a number of ministries and agencies, in particular, from the Ministry of Automotive and Agricultural Machine Building, the Ministry of the Fish Industry, the Ministry of Water Resources Construction, the USSR State Committee for Forestry, the USSR Gosplan and Gossnab, the Ministry of Finance, the USSR State Committee for Labor and Social Problems, and the USSR State Committee for Statistics. Among the members of the commission are the president of the VASKhNIL [All-Union Academy of Agricultural Sciences imeni V.I. Lenin], the chairman of the Union Council of Kolkhozes, and the chairman of the board of the Central Union of Consumers' Cooperatives.

Tasks. Jointly with other bodies of state administration, the commission forms all-union stocks of food and state reserves, and accomplishes centralized distribution of the most important types of food and agricultural raw materials. The new administrative body monitors deliveries of food products and raw materials and their optimum utilization, and develops economic principles of organizing product procurement.

One of the commission's most important tasks is comprehensive analysis of the economic activities of the agroindustrial complex as a whole, determination of the overall strategy of further development of agriculture and related sectors, and also preparation of major state programs for building up food resources taking into account the extensive incorporation in production of the achievements of science and technology.

The priority direction of the commission's activities is implementing social policy in the rural areas. Among the major problems it has to resolve are developing and

implementing measures to improve the economic methods of management and regulating economic relations both in the agroindustrial complex itself and with other national economic complexes. The commission is called upon to monitor the fairness of interbranch exchange and price parity for products of agriculture and the material and technical resources delivered to it.

There will also be great tasks in implementing a uniform policy in the area of land utilization and land management, and management of veterinary, quarantine, and other state-wide services.

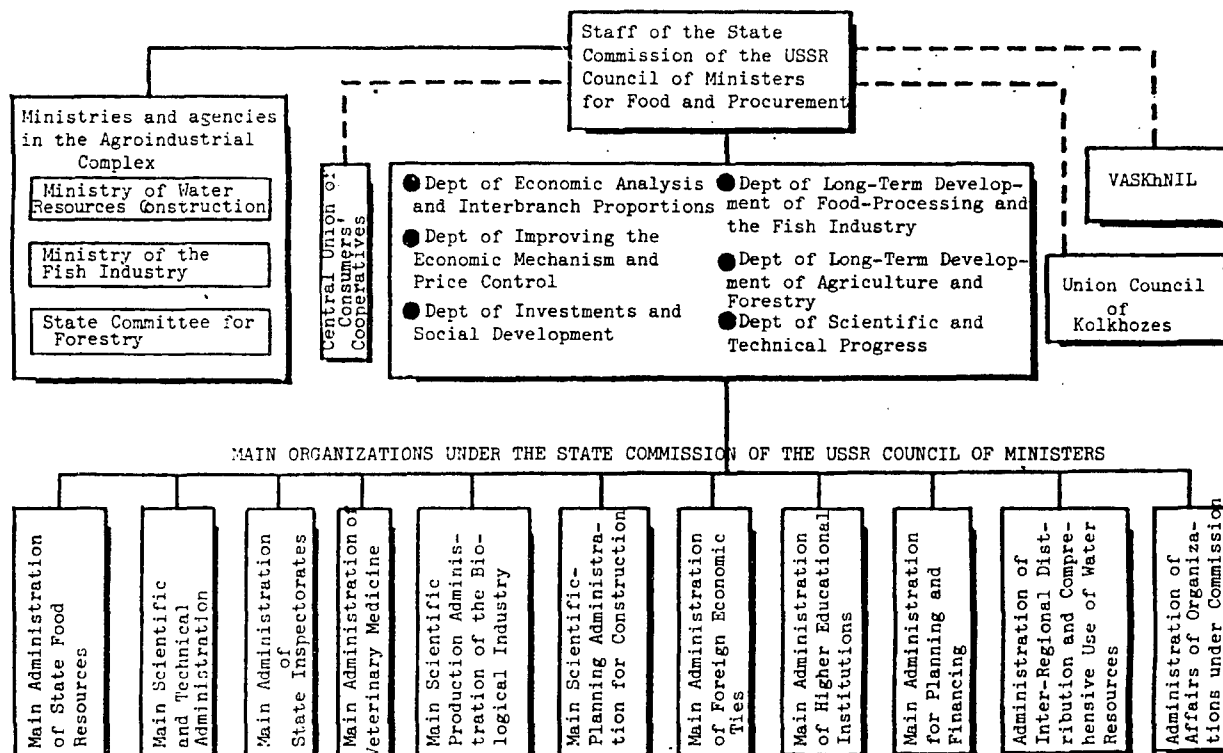
The commission develops the investment policy and exercises scientific and systematic guidance in planning projects of the agroindustrial complex, inter-regional distribution of water resources, and monitoring of their use. One of the functions will be development of scientific and technical and economic cooperation with foreign countries on the basis of broad use of its new forms.

Organizations Created Under the State Commission. A number of organizations are being created to accomplish the tasks assigned to the State Commission of the USSR Council of Ministers for Food and Procurement. It will have nine main administrations and a number of other subdivisions with a total personnel strength of 901. The structure of these organizations is shown in the diagram. Part of the sovkhozes, enterprises, and organizations of union subordination remain under the jurisdiction of the commission.

In connection with the abolishment of the USSR State Agroindustrial Committee, some of its functions are being transferred to the jurisdiction of other bodies. Thus, the USSR Gosplan currently develops and conveys, by agreement with the State Commission for Food and Procurement, initial planning indicators to the councils of ministers of the union republics and ministries and agencies of the USSR that are part of the agroindustrial complex. Besides this, the Gosplan, with participation of the councils of ministers of the union republics and by agreement of the commission, formulates proposals for volumes of deliveries of food and agricultural raw materials to the all-union stocks and draws up draft balances and plans for their distribution.

The Ministry of Finance develops the initial data and norms for payments to the budget and appropriations from it. The ministry is called upon to conduct an aggressive policy, jointly with the councils of ministers of the union republics, to radically increase the effectiveness of the resources being invested, to strengthen the policy of economy, and improve the financial condition of enterprises and organizations of the agroindustrial complex, and also to exercise systematic guidance on questions of their financial activities.

The functions of the USSR State Committee for Statistics are being made more precise. It is charged with ensuring a uniform methodology of accounting and



Structure of State Commission of the USSR Council of Ministers for Food and Procurement

reporting, and of analyzing the economic and financial activities of enterprises and organizations of the agroindustrial complex.

The USSR State Committee on Prices draws up proposals for purchase prices of agricultural products and raw materials, and also drafts of centrally approved wholesale and retail prices for food products. Besides this, it is called upon to ensure parity of purchase and wholesale prices.

The USSR State Committee for Labor and Social Problems is charged with summarizing experience and preparing proposals on problems of using progressive forms of organization and remuneration of labor at kolkhozes, sovkhozes, and other enterprises of the agroindustrial complex. The Administration for Problems of Organization and Remuneration of Labor in the Agroindustrial Complex will be created as part of this agency's staff.

The full responsibility for organizing the supply of material resources and ensuring that facilities of the agroindustrial complex as well as organizations of leaseholders, cooperatives of lease collectives, and peasant farms are provided complete equipment and materials is placed on the USSR Gosnab, the councils of ministers of the union republics, and their agencies locally. For these purposes, the Main Administration for Material and Technical Support of the Agroindustrial Complex of the former USSR State Agroindustrial Committee is being transferred to the staff of the USSR Gosnab.

Scientific support of development of the country's agroindustrial complex is accomplished by the All-Union Academy of Agricultural Sciences imeni V.I. Lenin. The activities of the academy are structured based on the tasks set for increasing food production, accelerating scientific and technical progress in the country's agroindustrial complex, and social development of the rural areas.

A scientific and technical council is being created under the State Commission of the USSR Council of Ministers for Food and Procurement to review the priority directions of development of science and technology, organize the conduct of expert examination of scientific developments and plans, and summarize and study advanced domestic and foreign achievements in sectors of the agroindustrial complex.

New Agrochemical Association Formed

18200458 Moscow PRAVITELSTVENNY VESTNIK
in Russian No 17, Aug 89 p 8

[Article by Ye. Osinin: "Instead of Ministry—Association: A Fundamentally New Structure for Branch Administration Has Been Created"]

[Text] You will agree that right now it does sound unusual—an entire branch with dozens of large enterprises, with scientific-research, planning and other organizations—and without a ministry. Is this even possible?

Today it is possible! Recently the State Agrochemical Association [Gosudarstvennaya agrokhimicheskaya assotsiatsiya] (Agrochim) was created on the basis of enterprises and organizations of the mineral fertilizer industry and the All-Union Production-Research Association for Agrochemical Services to Agriculture. This idea was not born behind closed doors. It literally has been achieved through the suffering of labor collectives, directors, scientific workers and branch specialists.

All of this began at one of the expanded meetings of the board of the Ministry for Mineral Fertilizer Production in November of last year. Supposedly current problems were being discussed then. But life itself nudged participants toward a more serious discussion. The following point of view was developed: to find essential new, flexible forms and methods of management and a management structure that would enable us to sharply improve the effectiveness of the work of enterprises and to closely link the wages of administrators to the results of their work.

It is hard to believe but fact remains fact—the initiative for the elimination of the ministry came from...the ministry itself. The determining factors, of course, were the process of democratization and expansion of economic independence of labor collectives and a planned transition to economic management methods.

Today the status of the State Agrochemical Association is only just being developed. But some of its contours are already evident. The association [assotsiatsiya] will include enterprises and organizations which are involved not only in the production of mineral fertilizers but also in agrochemical services to agriculture.

The state association will be a large national economic complex. It will bear the responsibility for satisfying the country's needs for mineral fertilizers, pesticides, synthetic ammonia, sulphur, methanol, caprolactam, and phosphorus- and boron-containing raw materials, as well as for the development of balances and plans related to distributing the aforementioned products throughout the national economy as a whole. Agrokhim secures the delivery of the means of chemicalization for the agroindustrial complex, coordinates the activities of the producers of these products and implements scientific-technical and methodological management in the area of chemicalization of agriculture.

The enterprises and organizations which have become a part of the association maintain their economic independence, operating in accordance with the USSR Law on State Enterprises (Associations). In relations amongst each other they utilize the principles of equal partnership as a foundation.

The branch's administration is now reviewing a number of variants and looking for the most effective solutions. But even the very first estimates speak of the fact that with a form of production organization such as the state association favorable conditions will be created for the

expansion of cooperative ties, for the purposeful use of all types of resources with good results and for increasing the competitiveness of products.

The operations of the state association are based on the principles of cost accounting and self-financing, utilizing economic management methods, financial-credit controls and prices and cost-accounting relations. Technical development and expenditures for ongoing operations are to be implemented by using the association's own resources, which remain at its disposal after accounts are settled with union budgets and with the budgets of republics and local management organs according to established norms and standards (tax rates). Government allocations are provided only for especially important national measures. It has been recognized as expedient to create a commercial bank with affiliates within Agrokhim.

The association intends to manage the enterprises that belong to it on a democratic basis with the extensive participation of labor collectives. The highest administrative organ is the council of representatives from the labor collectives of enterprises and organizations.

The council decides the most important economic development questions, selects the administration of the association and its chairman, determines the composition and number of workers in the organs and establishes the wage fund, labor conditions and wage system for its workers. The administration and the working organs are maintained with the association's own means. The structure, staff schedule and resolutions on subdivisions of the working apparatus are confirmed by the association's administration.

In order to improve management results of organ subdivisions and to create better conditions for stimulating work among workers, the basis for operations will be economic contracts concluded with enterprises and organizations of the association and of other branches of the national economy. In this way, maintenance of subdivision workers of the organs is to be implemented basically by means of economic agreements and partially by means of deductions from enterprises and organizations.

The association's foreign economic operations will be built on the principles of hard currency self-financing without the use of hard currency resources from centralized sources. Agrokhim is given the rights and functions of central organs of the branch administration in the area of foreign economic operations. The association has the right to create joint enterprises, associations and organizations with foreign partners, to organize technical and technical-commercial centers (bureaus) abroad and also to implement operations to export and import equipment, spare parts, equipment sets and consumer articles.

The USSR Council of Ministers has supported the proposal of branch labor collectives of associations, enterprises and organizations and of Soyuzselkhozkhimiya [All-Union Chemical Equipment Association] concerning the forma-

tion of the State Agrochemical Association. The resolution of the government has been accepted. In the near future it is planned to hold a founding conference of the State Agrochemical Association and to develop a model resolution on the new management organ.

Thus a branch management structure that is basically new to the country's national economy has received its ticket to life. The structure was developed under conditions of radical economic reform. This provides the basis for hoping for a good outcome.

POLICY, ORGANIZATION

Improvements Needed in Construction Time, Efficiency

18210025 Moscow FINANSY SSSR in Russian
No 7, Jul 89 pp 31-34

[Article by S. A. Chernetsov, NIFI [Scientific-Research Institute for Finance] sector manager, under the rubric "Capital Investment and Financial and Bank Monitoring": "Reduce Construction Time"]

[Text] Improvement of the economic mechanism in construction has enabled that branch's work to be improved somewhat in recent years. In 1986-1988 a number of steps were taken to restructure investment policy and to increase the efficiency of the construction complex's operation.

Construction organizations were allowed to formulate 25-30 percent of the production program independently on the basis of direct contractual relationships with clients. The share of capital investment for developing the social and cultural sphere was increased, a step that required an especially careful differentiated approach to the selection of priorities and to their distribution. Capital investment in the branch that is connected with the introduction of scientific and engineering progress, the production of consumer goods, and the processing and storing of agricultural output was increased.

However, despite the fact that the attention of construction-complex ministries and agencies has been concentrated on supporting state-plan goals of putting production capacity and facilities of social importance into operation, introducing elements of the new economic mechanism, and paving the way for converting subordinate enterprises to full economic accountability and self-financing, as planned by the 27th Party Congress and the 19th All-Union Party Conference, investment

policy is not being implemented consistently enough. The dispersion of efforts and resources over numerous construction sites continues, and construction time, which is double to triple the planned time, is being cut but slowly. Enormous funds—more than 13.5 billion rubles—have been frozen in uncompleted construction alone above the standard. Substantial resources could be freed by reducing above-standard reserves of uninstalled equipment, which have reached 5 billion rubles. Negative trends in planning capital investment continue.

The mechanism of credit financing should play an important role in implementing measures for increasing the effectiveness of the financial resources invested in construction. As a component part of the whole economic mechanism, it exerts an influence on directly increasing efficiency, promoting a strengthening of economic accountability in all elements of management and an intensification of material motivation for increasing yield on capital and labor productivity, reducing materials intensiveness per unit of output, and so on. The effect is being manifested in an intensification of production in all branches of the construction complex, a reduction in capital-construction time and a saving in capital-investment utilization, the elimination of above-plan reserves of realizable materials and commodities, a reduction in expenditures on the production of construction output and an improvement of its quality, and an increase in intraorganizational accumulations. All this is being reflected in an increase in the overall economic indicators of capital-construction effectiveness.

The sources for financing capital investment, the economically substantiated forming and use of which actively affect on updating and intensifying the industrial-equipment base of the national economy as a whole and of its individual elements, has a special place among the financial levers and stimuli for the effective reproduction and use of fixed capital. The structure of capital-investment financing sources and their dynamics can be illustrated in percents by the following table:

Indicators	1980	1985	1986	1987	1988
Capital investment volume, total	100.0	100.0	100.0	100.0	100.0
Including:					
—Budget allocations	47.2	44.5	39.8	42.4	39.3
—In-house funds	42.9	48.0	52.8	52.0	50.9
—Long-term loans	7.4	3.8	5.4	2.0	2.2

The predominance of one source or another is determined not only by the profitability level of the economic organizations but also by certain economic circumstances of their development. The decisive circumstances are two mutually related factors—the degree of centralization of monetary accumulations into the budget and the economic-accountability level of enterprises and associations. At different stages the effect of these factors has not been identical, and so the ratio also has changed. Right now a reduction in budgetary allocations is being observed.

As the data indicate, almost 60 percent of the branch's expenditures are covered by in-house funds of enterprises, organizations, and ministries and by long-term credit. This is why the buildup of production capacity and fixed capital of the nonproduction sphere will depend increasingly on the results of their economic and financial activity. While in 1988 the share of in-house funds in the sources of financing state capital investment was 56.9 percent for industry as a whole, in 1989-1990 it is to be increased to 63-66 percent.

Changes of still greater importance should occur in the structure of capital-investment sources when enterprises of all branches of the national economy are converted to full economic self-sufficiency and self-financing. At the present time, for example, it is proposed to replace financing of part of centralized capital investment with long-term credit.¹ In this case, USSR Minfin [Ministry of Finance] should transfer budget funds to specialized banks for use as a resource for granting credit.

Realization of this proposal will lead, in our opinion, to undesirable trends in the formation of budget income and the reproductive potential of industrial ministries and economically accountable enterprises. The annual transfer of budget funds to specialized banks will not be capable of eliminating the budget deficit in the near future, and a shortfall in budget receipts from the profit of enterprises introduced because the standard construction time was exceeded also will be telling. The burden of repaying enterprise indebtedness for loans will for a long time reduce receipts by the ministries' centralized funds, receipts that were intended for solving interbranch tasks, and will hamper the accumulation of resources for reequipping and rebuilding the enterprises themselves. In the final analysis, as has already happened more than once, the budget will be compelled to repay loan indebtedness for long-term credits issued for centralized capital investment. Long-term credit as the sole tool for regulating the demand for centralized capital investment will scarcely provide a state of balance in the investment sphere.

Use of the budgetary method of financing centralized capital investment as the basic one does not exclude the possibility of expanding the method of granting credit. We have in mind, in particular, the development of certain branches and production facilities where a redistribution of resources through the budget has turned out to be impossible or economically unjustified. When converting to the long-term granting of credits for a portion of centralized capital investment, a number of problems that concern the area of using credit for the purpose of expanding the reproduction of fixed capital (the ability to repay and the existence of ceilings), the subjects of the credit (enterprises, ministries, and so on), and methods for transforming budgetary resources into credit-granting resources must be solved.

The budgetary method of accumulating and allocating funds play an important role in the implementation of a new investment and structural policy in the national economy. The chief importance of this method for financing centralized capital investment that is allocated for new construction and the rebuilding of large industrial complexes with relatively lengthy construction periods in some branches, and for developing the infrastructure and the nonproduction sphere, as well as for making capital expenditures that involve nature conservation, the mastery of outer space and the World Ocean, and other expenditures of a similar nature that are included in the list of state orders, apparently should be retained in the future.

At the same time, a variant that fills the role and place of USSR Minfin in the system for controlling the national economy to the greatest extent is possible. USSR Minfin grants budget funds to client ministries in the form of credit, which can be repaid through the budget when the construction has been put into operation within the standard period, but through ministry funds when the deadline has not been met. Moreover, in order to intensify the responsibility of investment-process participants for observing construction deadlines, the experience of socialist countries (the Hungarian People's Republic, the Polish People's Republic and the Czechoslovak Socialist Republic) can be used. When the periods for assimilating production capacity have expired, the correspondence of the technical and economic indicators achieved for the new fixed production capital that is introduced through centralized investment to the design and rated effectiveness indicators is checked. The check reveals, first, the potential for further increasing the effectiveness and utilization of the data obtained at other enterprises and in other branches of the national economy, and, second, in the case of failure to meet the deadline for the design capacity, the client ministries and the contractors reimburse the harm to the budget.

As the experience of most socialist countries indicates, it is irrational to decline to finance capital investment from the budget. On the contrary, in recent years the role of centralized decisions in the capital-construction sphere has risen in most CEMA member countries. The state defines the main terms and directions that economic organizations should observe when investing capital. Their level of use of long-term credit for these purposes is somewhat higher, reaching 20-40 percent in the total amount of the sources for financing capital investment.

The sphere of application of long-term credit in the sources for financing both centralized and noncentralized capital investment can be expanded within certain economic limitations in the modern era. Under the 1989 plan, financing through long-term credit will not, as a whole, exceed 3 percent of the total amount of financing sources, the share thereof for various ministries varying from 0.3 percent (Minneftekhimprom [Ministry of the Petroleum Refining and Petrochemical Industry]) to 23.6 percent (Minlegprom [Ministry of Light Industry]). As the data cited indicate, there are definite possibilities for expanding the use of long-term loans for financing capital investment.

At the same time, according to reporting data for the 11th Five-Year Plan, the payments due for long-term loans for enterprises that are serviced by USSR Promstroybank [Industrial Construction Bank] have been reduced by 11.4 percent, while the overdue indebtedness on them has risen 2.1-fold. The main cause here apparently is the fact that the enterprises (or associations) do not have enough funds for timely and complete settlement with the bank for the credit. The scale of granting of long-term credits for the reproduction of fixed production capital is determined to a great extent by the growth of accumulations and rise in the profitability

level of enterprises built through credit. There are right now in the national economy about 24,000 unprofitable enterprises that are living on foreign accounts and are suffering large losses, because of which 10-11 billion rubles are lost annually.

The granting of credits for fixed capital expenditures should depend upon an increase in efficiency. This can be realized more completely with the comprehensive granting of credits for production facilities (for all expenditures relating to them) and the competitive selection of designs for the construction contemplated. The sphere for the granting of credits by banks for centralized capital investment can be new construction where the standard time does not exceed two years, the complete or partial rebuilding of associations and individual enterprises, and the reequipping of existing entities.

In selecting capital-investment financing sources as the function of a number of objective factors (characteristics of the various forms for reproducing fixed capital, the level of the branch's profitability, the product's capital intensiveness, and so on), the question is not the replacement of a single financing source (or method) by another but a rational combining of them and assignment to them of certain general functions that are aimed at reducing construction time and greatly raising capital-investment efficiency. The system for financing and for granting credits for investment that is aimed at reducing construction time could be improved also by deeper development of economic-accountability relationships in branches of the national economy, reform of the functions and tasks that are carried out by the state budget, and a general rise in the role of economic methods for controlling capital construction. The demand for centralized investment should be restricted by the ministries and agencies by mandating validation of the requirement for it, based on the criteria for utilization effectiveness of the applicant's production resources. When designating ceilings it is desirable to organize the execution of centralized capital investment on a contract basis. A differentiated tax on capital investment that is aimed at new construction and expansion conducted through the enterprises' own funds and the ministries' centralized funds should be introduced and the tax transferred into the state budget.

In considering the fact that residues of funds for developing production, science and technology are constantly being increased (they reached 7 billion rubles by 1 January 1989 just for industrial enterprises that operate under full economic accountability) and that building materials and equipment are in short supply, capital investment in the national economy that is financed from the budget must be reduced by at least by 20-30 billion rubles per year, according to the economists' computations, in order to create a normal economic situation. In the long term, the state budget should be a capital-investment source only for a structural restructuring of the economy, the execution of most important scientific and engineering programs, the development of

budgeted institutions, and the construction of interest-free housing. All the rest must be built through the resources of enterprises or the populace, or on credit.

The establishment of optimal proportions in the national economy by ensuring a mutual correspondence of the physical and material aspects of reproduction with its financial and cost aspects will promote a reduction in construction time and a rise in construction-operations efficiency. The construction front (the total budget-estimated cost of facilities being built at one time) that has been unfolding in the country over a long period of time has not been provided completely with financial and material resources and construction-organization capacity. This has reflected an imbalance in the investment process. According to the data of studies in material production branches, during the last two five-year plans construction projects were supplied, on the average, with 60 percent of the standard for capital investment. During said period, the average annual pace of increase in total budget-estimated costs was several-fold higher than the average annual rate of growth of capital investment, creating the grounds for prolonging construction time and for reducing the return from resources.

Many problems have accumulated in planning. Unfortunately, while formulating the 1989 plan, success was less than complete in fine-tuning the procedure or technology for developing it, and in balancing the operating program with the supply and equipment resources and the plan for putting production capacity into operation with the dates for delivering the industrial operating equipment. According to survey data, the average of 34 percent of total nonfulfillment of planned work is explained by failure to observe a correlation of the amounts of construction and installing work being planned with the availability of production capacity. Nonfulfillment of 16-22 percent of the work was directly connected with a shortage of capacity for carrying out definite sets of construction and installing operations, 13-16 percent with a shortage of capacity in the production base that supports the manufacture of constructional structure and parts.

The long time spent erecting capital-construction facilities prevents rapid introduction of the achievements of scientific and engineering progress in production, leads to the premature obsolescence of capacity, and impedes labor productivity growth, both in the branches invested in and in other sectors of the economy. According to Academician T. S. Khachaturov's data, even average-size facilities (for example, machinebuilding and chemical plants) take five or more years to build. If another year is added for design and the same also (at times even more) for assimilating the capacity, then it turns out that when the facility is brought up to the design level the facility is obsolete from the technical standpoint.

During the last three five-year plans, there was a trend toward a reduction in capital-investment effectiveness. While during the Eighth Five-Year Plan the national

economy received 40 kopecks of national income for each ruble of capital investment, during the 12th Five-Year Plan this indicator was reduced to 14 kopecks. Such a great drop in growth of national income is explained by objective and subjective factors. The subjective can include the dispersal of capital investment over numerous construction projects and facilities, as well as the prolongation of construction time connected therewith. Overstating capital construction volume in relation to the available resources limits the potential for replacing worn and obsolete equipment at existing enterprises, slows labor-productivity growth, and aggravates the shortage of labor resources.

Therefore, one of today's fundamental questions is that of assuring the feasibility of a program of operations that is based upon the existing production capacity of construction organizations. It is important to determine correctly the magnitude of the construction potential, to find variants for building up the capacity of construction organizations, to summarize the requirements for material, labor and financial resources, and to coordinate the buildup of construction capacity and development of the servicing branches.

With conversion to the erection of construction projects and facilities within the standard periods, the construction front must be sharply cut. Given the current pace and operating front, six years will be required for introduction of construction projects now being erected, and for some ministries nine years will be required. During the current five-year plan the number of facilities and their budget-estimated cost must be cut by 30-40 percent as a minimum. This process apparently should be continued also when formulating the capital construction program for the 13th Five-Year Plan. The role of the financial plans of industrial client ministries and construction ministries in ensuring a balance in investment is growing substantially.

Thus, the basic prerequisite for observing standard construction periods is the total and structural correspondence of the effective demand of economic organizations for investment to the material and engineering potential for assimilating capital investment and to the amount of construction-and-installing capacity and investment resources that are produced by machinebuilding, the building-materials industry, and others. While planning capital investment, concepts aimed at reproduction of the existing structure or those that follow stabilized trends must be rejected and greater use made of specific-purpose program methods, which are called upon to realize concepts that are founded on scientific forecasting of the development of social requirements and the investment requirements that ensue from them, and development of the resource base and of more rational paths of its use.

One of the basic elements which must guide the action of economic levers and stimuli is optimal demand for capital investment. First, the requirements for production-type capital investment should be substantiated,

based on the criterion of utilization effectiveness of the applicant's production resources; second, the sources for allocating resources for capital investment for production purposes should be correlated with their reproductive structure; and third, it is desirable to implement the ceilings of state centralized capital investment on a contract basis. Branches which are important for the national economy and which guarantee the greatest benefit will get them.

Footnote

1. Prior to 1927 the credit-granting method was predominant. But then, because of changes in the socioeconomic structures, changes occurred in the structure of resources used for capital construction, and the importance of the plan as a basis for the USSR's economic development and the role of the budget in the distribution and redistribution of national income were raised. The financing method, which by 1930 was the "interest-free" financing of reproduction of fixed capital through budgetary resources, became predominant, and in 1934 it was confirmed as universal, or the sole one in relation to all resources: to budget and intraindustry accumulations through writeoff, profit and other sources.

COPYRIGHT: "Finansy SSSR", 1989

BUILDING MATERIALS

Building Materials Minister Discusses Restructuring

18210021 Moscow SOTSIALISTICHESKAYA
INDUSTRIYA in Russian 21 Apr 89 pp 1-2

[S. Voenushkin, USSR Minister of Construction Materials Industry: "From the Command Economy to Economic Accountability"; first paragraph is source introduction]

[Text] The progress of economic reform and problems of expanding the rights of enterprises have been discussed in lively fashion in the press recently. But the processes of democratization of the economy which certain scientists, specialists and journalists are publicizing are, in my view, oversimplified, especially the process of controlling industry in the modern era. Many ardent words have been spoken about the lack of a need for branch supervision of production and about the view that this function is now superfluous. It has become stylish to accuse the ministries of all the mortal sins, primarily bureaucracy.

Well, criticism that is made constructively and correctly is something useful and necessary. The ministries actually were inclined toward administrative pressure, formalism and other obvious vices, within the framework of the command-administration state system, where there was a restriction of the rights of branch staffs and great dependence by them upon central economic and other agencies. But only at a great distance from the practical

and vocational activity of industry can a person seriously imagine how 50,000 enterprises and associations will be able to implement the strategic purposes of developing the country's economy without a precise system of coordination and regulation of the most important material, equipmental and financial resources, without getting the center's systematic assistance, which is customary for all on many problems that arise.

There is no doubt that during perestroyka's transitional stage, which is marked by the assimilation of a new economic mechanism, the perfecting of its most important elements, and introduction of the rental contract and other nontraditional forms of economic-accountability relationships, when such agencies as Gosplan, Gosstnab, Gosstroy, Goskomtrud [State Committee for Labor and Social Problems], Goskomtsen [State Committee for Prices], and others are retained at the state level of control, the existing control structure must be broken up without haste and without creating a vacuum and additional complexities in the work of laboring collectives. In the interests of the job and taking into account the demands of economic reform, it is extremely necessary today to reorient the ministries' work. Command principles must be rejected decisively and a conversion made to mutually responsible collaboration with enterprises on the basis of businesslike economic-accountability relationships.

The necessity for new approaches to controlling production is evident in the experience of the building-materials industry. The branch produces products for construction work (from cement and plumbing equipment to brick and local building materials, more than 400 specific items in all), for industrial consumption (asbestos, quarried materials, industrial glass, glass containers, and so on), and for agriculture (limestone meal, drain pipe, and fiber-glass mat), as well as for consumer goods (high-quality dishes), thermos bottles, locking hardware, and so on).

The decree on authoritative organs that was adopted in March last year defined the main principles of control of the country's building-materials industry at this stage of perestroyka. The implementation of a single scientific and engineering policy for the branch as a whole and, directly, the supervision of enterprises of the cement, asbestos-cement, asbestos, and quarried-materials industry, special reinforced-concrete, plants for special and industrial glass, and in-house machinebuilding, that is, the production facilities for that output that has a determining significance for setting the national economy's pace and proportions has been concentrated at the Union level. The enterprises that produce all other products of the building-materials mixes have been transferred to the direct jurisdiction of republic organs.

For completely understandable reasons, we are keeping cement production, the output volume of which is to be brought up to 165 million tons by 1995, under special monitoring. Such a goal can be reached only by coordinated actions, the inclusion in this work of all the

branch's enterprises, and the wide introduction of basically new energy-saving technologies and modern highly productive equipment.

The problem of growth of production volume and a rise in quality level for industrial and special glass, and also for light-guide equipment, has become unusually severe. Stress in supporting construction with roofing and asbestos pipe is increasing. Reequipping production facilities and sharply increasing output volume are to be executed here in the shortest possible time.

The ministry covers the quarried-materials industry, which controls the mining, processing and delivery to practically all branches of the national economy of graphite, kaolin, mica, talc, feldspar and other uncommon raw materials. The mining-and-upgrading and processing combines of this branch are spread out all over the country.

Serious technical problems in the asbestos industry, which is a separate subbranch which includes high-capacity mining enterprises and which processes about 300 million tons of mined material, require solution. Three thousand types of products used by many branches of industry are made from asbestos.

Such complicated and important problems of nationwide significance lie within the capability only of a high-powered unified complex of plants and a science-and-machinebuilding base, the execution of planned programs for developing and reequipping existing production facilities still being poorly visible without central regulation of the resource base and investment processes and without solution of the problems of manufacturing the equipment necessary for these purposes.

The precise delineation of the functions of the center and of officials in supervising the building-materials industry that was made about two years ago has enabled a number of positive advances in production and scientific and engineering activity to be accomplished in the recent period. The Union ministry's industry coped with plan tasks for 1988. The rate of growth in production volume in comparison with the averages during the preceding five-year plan rose one-and-a-half fold and labor productivity and profit tripled. Yield on capital began to rise.

Simultaneously the Union republics, freed from supervision of the base subbranches, have focused their attention on the production of local building materials and for practically the first time in many years met the goals for producing wall materials, limestone meal, construction ceramics, and other items of their products mixes.

Conversion to the supervision of subordinate associations and enterprises through a two-tier system and the forming of a staff structure in accordance with functional principle, and the creation of a rational scheme for controlling the branch's science have exerted a positive influence on the Union ministry's operation. Comprehensive science-and-production administrations include

scientific-research, design-development and experimental-testing organizations and machinebuilding enterprises, that is, units for scientific and engineering development have been organized for all types of building materials and articles, including industries subordinate to the republics.

However, there is still much work to be done to transform the branch's staff into an actively coordinational scientific, engineering and economic center that is responsible for and capable of solving problems of the industry's engineering and long-range development and of creating and introducing modern technologies and equipment. Unfortunately, weakness of the blue-collar worker in the machinebuilding branch is a serious problem, and, moreover, the main equipment suppliers are not part of the ministry's system and economic ties still operate extremely poorly here.

A special problem is rational organization of the activity of the ministry's central staff. It should retain the coordinational control functions—long-range planning, the development of branch levels of the most important types of products, approval and regulation of wholesale prices and tax rates, the placement of state orders, and certain other functions that relate to the category of state control of the branch. On the other hand, it is necessary to create, in lieu of a number of the traditional services, service organizations of the Construction Materials Bank, Computations and Data Processing Center, Supply and Marketing Administration, Economic Services, and Foreign Building Materials Trade types and, through them, to train personnel and to extend services for marketing output and material support for production, for the repair and manufacture of equipment, and for the introduction of progressive models of intraplant economic accountability and of the new forms for organizing labor. That is, new lateral ties should be reexamined, intensified and created, and the role of contractual relationships should be raised.

Simultaneously, the possibility of forming, on a voluntary democratic basis, founded on enterprises under Union subordination, regional Tsement, Asbestotsement, Mineral, Tekhsteklo [Industrial Glass] and Zhelezobeton [Reinforced Concrete] branch units (of the association type) is being studied. Their main task is to organize practical work in support of the coordinated activity of independent and economically accountable enterprises in regard to producing and marketing output of the appropriate profile, jointly solving social problems, developing the raw-materials base, and so on.

It is proposed that all the ministry's work be done on the basis of real self-financing, full economic accountability, and wide use of rental mutual relationships with enterprises and organizations.

Right now all our plants are operating on the collective contract, and they are motivated toward operating with fewer personnel. In many collectives we are indebted to

the circumstance that the five-year goal for growth in labor productivity was met back in 1988, that is, two years ahead of time.

The mastery of contract principles of management has created the necessary prerequisites for converting enterprises to the rental and cooperative methods of work.

But the ministry is not treading here the path of large-scale campaigns, it is acting with deliberation, and it is working with each laboring collective, fine-tuning individual elements and approaches.

In the initial stage, rental principles were used in concluding the ministry's agreements with production cooperatives, which possess a great degree of legal freedom in comparison with state enterprises (reporting, the work plan, plan indicators, and so on).

In December of last year the Struna production cooperative was established, based on the unprofitable Georgiu-Dezh (Voronezh Oblast) Reinforced-Concrete Sleepers Plant. The ministry transferred the fixed capital to it on a rental basis and is allocating resources in order to meet the state order, and it is extending scientific and technical assistance in developing production. It is still too early to draw any conclusions, of course, but it is encouraging that, in the months since the cooperative was created, the goal was met for the first time in 10 years and a profit was obtained. Worker and specialist manning has been cut by 17 percent and labor productivity has risen 1.6-fold.

On the same basis, production cooperatives have been formed, founded on the Riga Cement-Slate and Albaznyan Reinforced-Concrete Plants, the Dushanbe Asbestos-Cement Products Combine, and the Kaytra Plumbing Equipment Plant.

In accordance with the branch staff's existing program, the Belgorod and Staryy Oskol Cement Plants and the Termoizolyatsiya Association have been converted to rental operation, and a number of other enterprises have been readied for operation under the new system. By the end of this year a substantial portion of other enterprises will have been transferred to the rental contract. The ministry's staff is working on this as a goal of special importance.

The ministry is supporting the initiative of enterprise and association labor collectives to be converted to the rental contract and the forming of production cooperatives. The opinion of certain economic scientists that this will lead to the emergence of a "rentier ministry" is poorly substantiated. It is precisely through rental-contract relationships that the opportunity for a businesslike partnership, collaboration, and increase in mutual responsibility of the ministry staff and of enterprises appears.

At present, however, intensification of the branch's economic accountability has been hampered. Complexity and inflexibility of the economic mechanism and

the correlating of individual standards to the five-year plan are creating barriers on this path. The existing standards for forming enterprise economic-accountability funds through the multiple-channel system for distributing profit, 65 percent of which is sent to the budget, are not adequate for solving the most urgent production and social problems. The ministry's proposals to leave enterprises all 100 percent of the profit, which they stipulated in the plan for 1989-1990, and to stimulate better the filling of state orders for the most important types of output, particularly cement, above five- year plan tasks will not get the support of central economic agencies. Right now the insufficiency of in-house funds for developing the branch's production is being made up for partially by the allocation of central

capital investment. But eventually it will no longer be possible to count on this source.

Because of this it would be more correct to leave the monetary resources necessary for normal activity under self-financing (about 60 percent of the profit) at the disposal of the branch, the remainder to be withdrawn into the budget in the form of a direct tax on profit. This will be simpler and more rational and, the main thing, it will pave the way for real self-financing.

Finally, it is necessary to approve as soon as possible the Statute on the Branch Ministries and to establish with precision their functions, rights and responsibilities.

FOOD PROCESSING, DISTRIBUTION

Inefficient Production Blamed for Sugar Shortage

18270142 Moscow IZVESTIYA in Russian
14 Sep 89 Morning Edition p 2

[Article by A. Platoshkin: "What Shall We Do About Sugar—Who Is to Blame for the Shortage of It: the Beetgrower, the Refinery Worker, or the Moonshiner?"; first three paragraphs are source introduction]

[Text] What they are talking and arguing about in store queues, in the family circle, and at official conferences.

We consume 46.8 kilograms per capita, which far exceeds the medical standard. Yet despite this, there are rationing coupons and price fixing.

The new season for sugar refining has started.

The beet harvest is good practically everywhere. More than 3.3 million hectares are involved. The refineries' design capacity enables the raw material to be refined in about 90 days.

We have many rayons, oblasts and republics where the "sweet conveyor line" has been fine-tuned. Belorussian beetgrowers have increased production of the raw material. And their partners will raise output of the finished product. In Voronezh, where the sugar-beet area is large, it is intended to get no less than 250 quintals of roots from each 200,000-hectare area of plantings. The local Maslovskiy state breeding station will get 450 quintals or more each, shipping ecologically pure raw material, since herbicides are not used. Matters are going well for Lithuanian and Latvian beetgrowers and refinery workers.

Science will help to expand the industry's prospects, providing the workers in the field with promising strains, technologies and methods of organizing work and control. The processes of integrating the farms and refineries are being intensified, and associations and systems linked by a common economic interest—income from the final product—are being created. The harvest is greater where the plantations have been converted to rental and contract collectives, where manual cultivation of the crops has been reduced to zero.

If all this is so good, just why are you and I put on the coupon system for sugar supply? Where is it, where did it disappear to?

There are successes, of course. They are all local. But throughout the country as a whole? Last year there was a shortfall of 1.6 million tons of sugar. Including sugar from the Russian Federation, Kazakhstan and the Moldavian SSR.

And the moonshiner? What was his role in the shortage? The specialists say that he consumes about a million tons of sugar in making alcoholic poison. This figure has been stable for many years. According to USSR Goskomstat

[State Committee for Statistics] data, moonshine production is not growing. It is even dropping somewhat. This is the contribution of the militia, which is doing important educational and preventive work. During this work, in particular, a large amount of moonshine apparatus has been confiscated.

As we see, the moonshiner is not at all the main culprit for the disappearance of sugar, although there should be no leniency for him. What is more, there is really a question whether there is a basis for speaking about a sugar shortage if consumption of the output exceeds the medical norm. It is all true. However, one must not forget the large number of low-income families and pensioners. Those for whom sugar and bread at times are the main means of sustaining life.

It is easier to introduce coupons. It is more difficult to abolish the shortage. Although much is being done to do so. The beetgrowers greet the harvest well equipped. The sugar refineries make the machinery and equipment go full blast.

Still the word "many" or, what is worse, "some," have to be added to this kind of report. On the whole the situation is not so bright. The sugar-refining season lasts, as a rule, 145-150 days or more. What does this mean in practice? A substantial portion of the output is missed. Altogether, the sugar in the beets is about 16 percent. We get only 10-12 percent and we lose the rest. This means many, many thousands of tons of sugar. The time and fuel consumed per unit of output is much higher than in other countries. Sugar packaging is on the 19th-century level. Indeed there are things more modern than mat sacks. But we do not get it in sacks. This means that somewhere, again, it is poured and repoured and is lost. What is more, how do you handle such "packaging" with our mechanization of auxiliary operations?

A large portion of the beet-harvesting combines are idle. The sugar refineries do not have enough of the greatest necessities: limestone and beet-piling machines, hard-surface areas, and installations for active ventilation of the piles. And what about overhaul, rebuilding, and the introduction of new capacity? The situation here is absolutely depressing. In Voronezh Oblast a plant is being erected under the number "13", a number that is fateful for it. It has been under construction for more than 10 years, and the end of the work is nowhere in sight. There are take-your-time construction units in other republics and oblasts. About a fourth of the enterprises of, let's say, the Russian Federation were erected 100-150 years ago. There are many such veterans also in the Ukraine. For decades their fixed production capital has not been updated.

Sugar production occupies tens of organizations which are not, in essence, related economically. It would seem to be simple to unite the interests of the parties concerned: to make their work depend upon the final output. There is such experience in the Ukraine, at Stavropol, in the Kuban, and at other places.

In agroindustry the attitude toward the "sugarmakers" is chilly, and that is prejudice. And doesn't the somewhat disdainful term "food-industry worker" come from this? According to tradition they try to invest funds to increase the harvest. The area is not, of course, pampered with munificence. However, if the beets are not stored anywhere and there is nothing to take in and process, what is the sense of "racing" for the gross amount? To multiply losses that already are great?

There are those who are accustomed to thinking that the partners fleece the countryside, but many find out with surprise today that the "fleecers" are eking out a most miserable existence. There are decrepit, dilapidated buildings which were inherited from sugar-industry workers and antediluvian equipment. There is no domestic-amenities center, not to mention dining rooms and showers. There is nothing with which to build housing and kindergartens. The enterprises will not be able to pay their workers for several months. The arrears on Gosbank loans of the same Voronezh Oblast sugar refineries exceed one-and-a-half fold the value of their fixed capital. And this, let us note, where there are millions in profits. What kind of question can there be about economic self-sufficiency or self-financing?

One day a prestigious production facility loses experienced personnel. They leave for other branches. Many of them who remain are reconciled with the disastrous situation and do not believe in the possibility of somehow changing, improving, keeping pace with scientific progress. N. Troynin, director of the Georgiu-Dezh Sugar Refinery of Voronezh Oblast, an administrator, probably diligent and conscientious, could not competently assess the virtues and deficiencies of the plant's equipment. He could not think of what to say about how to improve the backward technology of his enterprise or of the whole branch. Specialists from Moscow had to answer for the director many of the questions put to him by participants of an oblast sugargrowers' seminar that convened here. And the reports of A. Kornienko, director of the All-Russian NII [Scientific-Research Institute] for Sugar Beets and Sugar, did not completely satisfy the practical workers.

In brief, the sugar conveyor line deserves more attention. Right now it is reminiscent of a sieve....How could such a thing happen to the branch, the successes and the failures of which touch each one of us? Where did the superprofits of its refineries go? It turns out that as much as 80 percent or more were taken into the state budget. True, the Deputy USSR Minister of Finance V. Semenov gave assurances that this year the withdrawal will be only 69 percent, and later the deductions will be reduced still more. Thanks, as they say, for this.

What are the decisions, recommendations and forecasts of our planning, economic, and management services and agencies and our science? To bring the branch to "a loss of pulse," in order then to revive it without delay? The disdain for the "food-industry worker" was answered with the "strained situation" in foodstuffs.

What does the "sugar drama" teach us? The necessity for a sober analysis, for a complete rejection of hypocritically reassuring phrases and slogans of the "production as a whole is growing" and "relying on progressive methods" type. The farmers have "relied" on them for many years. Almost all the beets, if reports are to be believed, are grown with the use of intensive technology. But only about a fifth of the area gathers a harvest of as much as 350 quintals per hectare. Beet production has been reduced in comparison with the past five-year plan.

Because of this, as is said, we must dance. Eliminate heavy, nonprestigious manual labor on the plantations. Supply the whole "sweet" conveyor line, from beginning to end, with productive equipment that is less intensive in the use of power and metal. For on the average, each sugar refinery spends 10 days of idle time for technical reasons alone per season. In the field, losses of time and of the harvest are not even measured. Much is being done for the beetgrowers and the sugar-refinery workers by Minavtoselkhoz mash [Ministry of Automotive and Agricultural Machinebuilding]. Although he still must pay and pay on long-standing debts to the village. But it is important also for other ministries, especially Minobshchemash [Ministry of General Machinebuilding], and the whole defense complex, in executing the conversion, to undertake more decisively the production of vacuum equipment and centrifuges, pilemakers and beetcutters, and sugar-refining, sacking, packing, and other equipment. For success in resolving such an important task as the Foodstuffs Program actually takes shape here from small workaday things. The transport people are to improve the technology for delivering raw materials. Without transporting dirt and air, but insuring rapid transport for the republics and oblasts where the sugar-refining seasons is finished earlier.

Socialist competition has not exhausted its potential. Of course the time has gone when the peasant and the blue-collar worker could be roused to crash work by the wall newspaper alone. But indeed, has a kind word uttered in the presence of others lost its value?

One must not forget about material stimuli. The beet-growers, for example, cannot understand why the issuance of sugar as payment in kind was cut off for them. Also why the plants had to change the quota of sales of sugar to their workers.

Shall we escape from the distribution of sugar by coupons? It is not a simple question. Much remains to be done in order to answer it positively. But then, how many other questions of the same nature are there?

GOODS PRODUCTION, DISTRIBUTION

Roundtable Examines Deficiencies in Shoe Manufacture

18270148 Moscow *PLANOVOYE KHOZYAYSTVO* in Russian No 8, Aug 89 pp 20-26

[Report of roundtable discussion, place, date not given, participants: P.A. Ignatovskiy, PLANOVOYE

KHOZYAYSTVO editor-in-chief; V.D. Orlov, deputy director, USSR Gosplan consolidated department of consumer goods, light industry, services and trade; K.A. Karanyan, deputy director, USSR Ministry of Trade Glavtekstilshveyobuvorg; V.R. Melikhov, RSFSR deputy minister of light industry; G.A. Abrashina, planning department chief, "Zarya" Moscow industrial trade association; Ye.B. Bykhovskiy, deputy minister, USSR Minister of Light Industry: "Footwear"]

[Text]

P.A. Ignatovskiy: After the pointed discussion at the first Congress of People's Deputies, the time has come for a balanced, constructive approach to the systemic problems troubling society. One of them, one of the most vital, is the problem of footwear. If we could manage to solve it, if only for the time being within the quantitative limits we have, but with a change in assortment and an increase in quality, this would bring some relaxation of the economic and social situation.

The journal's editorial board decided to hold a discussion in order to consider the state of footwear production and the possibility of augmenting production. Conversation here must be open and businesslike.

How Much Footwear is Produced?

V.D. Orlov: The country's provision of footwear for the population cannot to date be called satisfactory. This is evidenced by both the shoe stores' empty shelves and the long lines for fashionable footwear when it is offered for sale. The country's footwear production in 1988 was approximately 820 million pairs, or about three pairs for each member of the population.

Yet nevertheless, there is not enough footwear. At times we are asked why there is such a problem with footwear; after all, the United States, for example, produces significantly less than we do. It must be taken into consideration that the United States imports the majority of consumer footwear, having created its specialized production in other countries. For example, approximately 800 million pairs of shoes are made in Taiwan for the United States.

K.A. Karanyan: We should look at the kind of footwear our trade is receiving. The absolute figures hardly characterize fully the state of the population's footwear provisions. For this, we need to know the structure and assortment of the output. It is made up of the production of leather, rubber, indoor, sport, and artificial leather footwear. One type of footwear cannot and must not replace another. So, we produce only 370 million pairs of leather footwear, 164 million pairs of indoor footwear, and 40 million pairs of sport footwear. But of that 370 million pairs of leather footwear, over 50 percent is children's. In other words, only about 170 million pairs remain for the entire adult population, and thus it is not surprising that the demand for the trade's leather footwear is only somewhat more than half met—60 percent.

I dare say that the USSR State Committee for Statistics should publish in its anthologies detailed data on the structure of the country's footwear production in order that the population have access to such information.

V.D. Orlov: In accordance with long-term agreements, we import footwear from a number of socialist countries, and certain capitalist ones. In 1987, on the foreign market we purchased only 134.6 million pairs of footwear, including 72.8 million pairs of leather footwear. Thus, the population's per person consumption in the past year was 3.3 pairs. Yet it is necessary to keep in mind that we pay for footwear with raw materials, which cannot but alarm us.

As we know, many consumers are dissatisfied with the selection and quality of domestic footwear. And there are serious grounds for that. The annual output of fashionable footwear has decreased by 28 million pairs in comparison to 1985. Over these years, the production of children's footwear increased significantly, allowing for a substantial improvement in meeting the corresponding demands, but on the other hand, women's footwear output was reduced by 3 million pairs, and in comparison to 1980, by 10 million pairs. And after all, women's requirements are more diverse; they also require a greater quantity of footwear; in addition, the population growth must also be taken into consideration.

V.R. Melikhov (RSFSR minister of light industry): The republic's most severe situation with footwear came about in 1983, when the branch's enterprises produced only 311 million pairs. The situation was exacerbated when imports began to be reduced.

Within the branch, the fixed productive capital was extremely worn out, and the social living conditions were unsatisfactory. The situation was especially bad in the Urals, Siberia, and the Far East. There in general, new enterprises had not been constructed in years, nor had old ones been reconstructed.

Excessive, poorly-grounded plans were unfulfilled by the branch over the course of 20 years, which seriously weakened interest in work. Personnel turnover increased, further complicating the branch's state of affairs.

Measures to accelerate enterprises' renovation and reduce personnel turnover were taken to correct so critical a situation. And now the situation has changed for the better. We have re-tooled a number of enterprises in the republic's central area, as well as in Nizhniy Tagil, Tyumen, Omsk, and Irkutsk. In total, 333 million pairs of footwear were produced in the republic in 1988, and over 5 months of this year, the growth was 4 million pairs. While earlier, 70 percent of enterprises did not fulfill the production plans, now there are only five such factories.

In 1983, the profit within the footwear industry was only R160 million. Of course, this money was insufficient for

production development. In 1988, as the result of improvements in the branch's work, as well as changes in management conditions, profit rose to R367 million, in the current year, apparently it will be about R450 million. These are already completely different opportunities for production intensification and increase of qualitative indicators.

Improved footwear quality and increased production will also be promoted by the fact that we have recently begun to disseminate the positive experience of both Soviet and foreign enterprises. We have begun to build "turnkey" factories, and to create joint ventures with foreign firms.

G.A. Abrashina: Our association appears fairly successful. In the 11th 5-year plan, the pace of production growth was 10 percent, and in the 12th 5-year plan, it will grow to 15 percent.

Over 18 million of the overall production volume (29.5 million pairs) is leather footwear; over 50 percent is children's; 18 percent is fashionable footwear, and 20 percent is winter footwear. This is much higher than the branch's average indicators. Children's footwear production volume increased by 3 million pairs in the current 5-year plan; footwear for the elderly, by 25 percent; for youth, 37 percent.

The guarantor of our success is that the association has been technologically retooled; new capacities have been introduced over several 5-year plans, that is, we re-equipped the "Zarya" and "Svoboda" factories, and a number of others, practically up to a level of transition to the new management conditions, and thus we were confident that we could handle the tasks.

How Much, and What Kind of Footwear?

V.D. Orlov: Going by the situation in the stores, for the time being, the changes in the footwear industry are still unnoticeable. Too many problems have accumulated; they cannot be solved in a short period of time. Yet conditions exist for enhancing production, and they must be fully exploited.

In order to meet the demand, it should first be determined how much footwear we need. If we base this on sensible usage norms, and take into consideration the median age of the country's population, then according to our calculations about 1.1 billion pairs of footwear are needed.

We must still expand the selection and solve the problem of turning out fashionable footwear. The demand for children's footwear will be fully provided for in the near future. Children account for 27 percent of the population at large, but the share of children's footwear in the overall production output is 45 percent (370 million pairs in 1988). It has been proposed that 375 million pairs be manufactured this year, and 385 million in 1990, for a resultant complete fulfillment of the trade organizations' demands for children's footwear.

K.A. Karanyan: In my view, providing each republic with the necessary footwear, especially children's, is a very important issue. If we look at the statistics, we will see that footwear production differs sharply on a regional basis. That is, each republic produces per resident: Armenia, 6.1 pairs; Moldavia, 5.2 pairs; Estonia, 4.6 pairs; Belorussia, 4.3 pairs; Latvia, 4.1 pairs; the Ukraine, 3.7 pairs; Georgia and Azerbaijan, 3.4 pairs; Lithuania, 3.3 pairs; Kirghizia, 2.7 pairs; RSFSR, 2.6 pairs; Kazakhstan, Uzbekistan, Tajikistan, 2.1 pairs; Turkmenia, 1.6 pairs. This causes significant product shipping. Moreover, the population of one republic travels to other republics specifically to purchase shoes. Of course, all the footwear produced in a region cannot be left there. It is important to take people's psychology into consideration. A person who visits Moscow feels that he must bring back footwear from the capital. Everyday footwear must be produced in the necessary quantity in the republics themselves. This particularly concerns children's footwear.

B.R. Melikhov: The children's footwear situation in the RSFSR is now changing for the better. While in 1983, the branch produced 138 million pairs, by the end of the 5-year plan, 168 million are envisioned, that is, about 4.5 pairs per child. But already this year, the USSR Ministry of Trade order is 175 million pairs, and we are obliged to fulfill it.

When Will We Get the Needed Amount, and What is Necessary For This?

V.D. Orlov: All the same, the situation in the footwear industry is changing for the better, even if not as rapidly as we would like it to. This allows us to precisely determine today the periods when the population's needs will be completely satisfied. Obviously, for children's footwear, this is 1990, and in general, for all types of footwear, 1993. Of course, this is not an easy task; it requires the amalgamation of efforts of all those associated with manufacturing this product. Only at first glance does this seem easy. In a conversation with Italian industrialists, I heard, "You mastered space rockets, while we mastered fine footwear." We cannot forget that normal provisioning of the population with essential goods, including footwear, is not just an economic but a major social and political problem. It is what characterizes the people's standard of living, promotes improvement of the moral environment, and shows the possibilities of the social order.

Ye.B. Bykhovskiy: According to the specialists' calculations, our country's realistic annual footwear consumption norm per person, taking into consideration the particulars of climate and demographics, is 4.25 pairs (not including felt and rubber footwear). On the whole, the footwear demand is 79.5 percent satisfied. In recent years, primary attention has been focused on increasing the output of children's footwear, and basically eliminating shortages in that area, but the acute problem of increasing footwear production for the various categories of the country's adult population remains; it is the

production volume that is practically on the same level as before. It is necessary above all to increase the production of calfskin footwear by about 150 million pairs annually.

Enhancing the production volume requires creating production capacity for an additional 165-170 million pairs, and a major improvement of the branch's equipment fittings. The USSR Ministry of Light Industry has worked out and is implementing a multi-faceted development program for the leather footwear branch. Its execution, however, is constrained by the lack of the necessary capacity among the construction organizations and the insufficiency of modern, domestically produced equipment. The Government has allocated supplemental hard currency resources for the technological retooling of active footwear enterprises, and has purchased highly productive modern equipment; it is already expected to produce a return next year.

An effective means for rapid enhancement of production capacity is "turnkey" enterprise construction by forces of foreign firms. Three footwear factories brought into operation in 1987 which were built under such circumstances produced 4.5 million pairs in 1988, and R74 million was transferred for all types of activities, with an estimated construction cost of R91.5 million. The purchase of an imported footwear consignment corresponding to the annual capacity of a single factory (2 million pairs) would have cost the country an amount equal to the cost of its construction, but after all, the factory will be in operation for an extended period. Contracts have recently been signed to create 10 more factories for production of high-quality, competitive footwear.

The unsatisfactory quality and selection of materials for footwear production, and insufficiently qualified and stable production collectives are serious problems. As the work experience of joint enterprises shows, the collective can be stabilized and the workers' qualifications and involvement raised relatively quickly if the results of their labor receive material incentive. As far and providing industry with modern materials is concerned, this is a complicated task whose resolution requires that the lag in the development of related branches be overcome, and consequently, it requires capital investment and time.

The development of the footwear industry is significantly impeded by poor provision of domestic chemical materials. Practically every pair of shoes is produced using imported chemical materials, including footwear with the most up-to-date base strengthening method of direct casting (this constitutes 80 million pairs of men's, women's, and children's shoes), and all the footwear on molded soles (another 130 million pairs). Nor are there sufficient materials for the production and finishing of natural calfskin, and this affects quality.

USSR Gosplan supports the USSR Ministry of Light Industry proposal for the priority development of the

footwear and related branches of industry, keeping in sight the resolution of this problem by 1993, with footwear output increasing by an average of 30-35 million pairs per annum.

V.D. Orlov: In order to achieve the indicated volumes within the planned periods, it is necessary to re-equip old factories with modern technological equipment, as well as to stipulate production for enterprises being built up anew. Introduction of progressive equipment and technology will allow the minor operations to be unified in one cycle, and the quantity of production staff to be reduced while enhancing the production pace. At present, production in developed capitalist countries is organized such that a single pair of shoes undergoes 12 technological operations, but here, for now, it goes through 48-60. Quite a substantial difference.

However, there are certain difficulties here. In order to interest enterprises in the production, for example, of modern children's footwear, they were allowed to establish index "N" ["new"] for footwear, and a corresponding 15 percent surcharge on the price. As a result, there was the possibility to significantly improve the labor stimulation of the construction designers and technicians, and increase quality. But then the AUCCTU decided that no such surcharge may be established for children's footwear, and it was repealed. The population gained very little by this, and quality seriously suffered. In my view, repeal of such a surcharge was not justified.

G.A. Abrashina: I would also like to say something about index "N" for children's footwear. Our association has been involved in an experiment since 1983. Even though the enterprises were given the right to increase surcharge to 30 percent, we used only a 15 percent surcharge, and a 7 percent surcharge for children's footwear, ranging from 10 kopeks for "gusariki" [leather baby booties] to 1 ruble for girls' boots. With the repeal of the surcharge we lost R4.5 million, but the consumers did not gain anything, since at the same time we were permitted to sell footwear at the contracted prices, which were substantially higher. In January of this year, the contract prices for children's footwear were abolished. It is very difficult to ensure self-financing, and to stimulate an increase in work quality under such conditions. In our view, the repeal of markups only impedes production development.

V.R. Melikhov: In order to better satisfy demand, we must undoubtedly change planning and stimulation, improve relations with trade, and study the consumers' demands more fully. We transferred five enterprises to direct relations with trade, and immediately, the consumers' attitudes toward these enterprises and the enterprises' relations with trade improved substantially. It is much more convenient for us to work directly with the consumers, without the wholesale middleman, and this experiment must be developed. Now, we frequently act without knowing exactly or concretely what it is that the consumer needs. VNIKS [USSR Ministry of Trade All-Union Scientific Research Institute for the Study of

Consumer Goods Demand and Trade Prognostication] studies the change, but the information does not reach us. And it should give industry a clear-cut program. In fact, trade orders are based upon those orders received from wholesale warehouses in which the necessary volume is determined by the chief commodities expert. Of course, for the most part, these are highly qualified people, but apparently, in the given situation we cannot speak of a scientifically based determination of the population's needs.

K.A. Karanyan: Since we have touched upon matters of improving planning, I would like to say something about the wholesale fairs. We are given control figures, which we take to the fair in order to conclude contracts. The fairs are held in March, and we actively seek out suppliers. But then the planning organs begin to refine the production indicators, usually toward lowering them, and a gap appears between what was planned for trade and what production can actually yield. And naturally, this causes the indicators' imbalance. Obviously, the fairs must be held later, when the control figures have already been determined, and production possibilities have been taken into consideration. Incidentally, this also affects production selection. Trade is forced to fill the "breach" between the indicators not with the goods the consumer needs, but with those received from the producers. But after all, the fairs are called upon primarily to ensure that the population's orders be satisfied, to bring supply and demand into correspondence, not to force trade to necessarily accept everything which is offered.

G.A. Abrashina: I would like to support the proposal to transfer the fairs to later dates, and their order must be changed, too. After all, what do we have now? In the beginning, we conclude contracts to supply the trade with a certain selection of goods, and then we hold a fair for the supply of raw materials and components. If we could not buy the raw and other material needed, then it is clear ahead of time that we will break our obligations to the trade. Trade fairs must undoubtedly be held later, perhaps in August or September. It must be concretely determined from the start what materials we may have at our disposal, and then we may conclude contracts for the supply of our production.

We have claims against the planning system. First and foremost, we are given a state orders for the production of footwear for children and the elderly. But while the criteria for children's footwear (up to size 24) are more or less determined, the concept of "footwear for the elderly" is very subjective: GOSTs [All-Union State Standards] have been established to regulate certain parameters, as well as a maximum price level. For example, we must produce boots costing up to R40 for the elderly, but it is impossible to make good boots at that price. At the same time, we make very comfortable "Alyaska" boots for R37.50. It is mostly the elderly who buy them, but according to GOST these products cannot be considered to be in the group "for the elderly" as they do not have leather uppers. Thus, we are forced each

time to draw up a contract with the trade enterprises in order that they count this product as footwear for the elderly. It seems to me that there is no need to specially designate this footwear while planning. A comfortable, inexpensive product must be produced for everybody, and each consumer must decide for himself whether this footwear is appropriate for him.

And one more thing about state order. At the present time, state order does not give the enterprise's collective incentive for rapid sale of their production. The enterprise fulfills the state order; its salary is guaranteed, the production reaches the trade organizations, and its sale no longer affects the enterprise's economic indicators. Obviously, there is an issue for reflection here as well.

V.R. Melikhov: I agree that the criteria for defining "footwear for the elderly" are not successful. Undoubtedly, there must be social defense of the interests of certain population groups, but the very concepts of "youth" or "elderly" are highly subjective; this is not just an age. People's tastes and demands are extremely varied, and cannot be squeezed into tight frameworks. Footwear must fit well, be comfortable for the stocking feet, fashionable, but inexpensive at the same time, in order that people with low incomes may purchase it. That is what the production orientation must be. Unfortunately, this is a difficult problem to solve, for a number of reasons. One of these is the incomplete nature of the established footwear GOSTs. If they are met, and we are obligated to do so, then footwear will be clumsy and heavy. True, recently we have reached agreement with the GOST structure, and at the new enterprises we are not manufacturing footwear by the old standards, rather, we are making footwear which responds to the consumers' demands.

But perhaps the main reason is the lack of sufficient and good-quality raw materials, equipment, and chemical materials. There is not enough of any of this, and sometimes our Soviet enterprises, as they say, cut our legs out from under us. Having been granted the right to enter the international market, certain directors aspire first to "earn" hard currency above all, rather than fulfill the internal delivery plan. They provide foreign enterprises with raw materials, but our factories have an acute leather shortage. Is this a real state approach?

G.A. Abrashina: Quite recently, we were forced to stop the conveyer at one factory for a few hours, since the lining material had not arrived. We often simply have to "coast." Can we really achieve high quality under such conditions?

V.D. Orlov: The former USSR State Agroindustrial Committee played a highly improper role in providing enterprises with raw leather materials. All leather materials prepared in excess of the plan remain in its local organizations. They can sell this raw material for hard currency on the foreign market. Of course, at first glance, entering the world market could only be welcomed, but in actuality, things were set up rather badly. These

organizations do not have any experience in foreign trade: They are selling raw material at low prices, and our state must then buy leather goods at high prices. Under conditions of an acute shortage of raw leather materials, their sale on the foreign market must be implemented on a licensed basis under the control of the USSR Ministry of Light Industry and USSR Gosplan. But for our purposes in general, raw leather materials must be processed into leather for fully satisfying the demands of our footwear enterprises. For this, we need to reconstruct old tanning plants in the near future, and to introduce new capacity for processing raw leather material in order to altogether stop purchasing leather goods for hard currency by 1993. We need to overcome a negative attitude toward tanning plants on the part of local organs of power; they feel that this production is ecologically unfavorable, therefore they frequently protest against their creation and expansion. The operations experience of plants such as the ones in Kursk, Voznesensk, Ryazan, and the village of Gatovo, Minsk Oblast are evidence that with proper organization and appropriate technology, this industry can be completely "clean" and highly efficient.

Augmentation of footwear production could proceed at an even faster tempo, but the construction organizations are not fulfilling the plans for enterprise construction and reconstruction. Occasionally, new equipment is not put into use in a timely manner. At the same time, situations occur where production space stands empty since the arrival of new equipment is delayed. Because of the elimination of the Ministry of Light and the Food Industry, production of the necessary equipment was entrusted to a number of defense branches; they, however, could not restructure themselves quickly, and the footwear industry is experiencing serious complications.

Over 3 years of the current 5-year plan, capacity for producing 35.6 million pairs was not brought on line. Immediate organizational and technical measures were taken, and as a result, the situation has been corrected somewhat. However, capacity for producing approximately 25 million pairs will not be introduced in the current 5-year plan.

USSR Gosplan, together with the USSR Council of Ministers Bureau for Social Development have requested of the Government that resources be allocated for the development of the leather and footwear industry. The Government fulfilled this request at the expense of state credit.

It is to be hoped that our meeting today will promote a solution of certain problems of the footwear industry, as well as accelerate its development and its attainment of the goals set before it.

COPYRIGHT: "Ekonomika". "Planovoye Khozyaystvo". 1989.

HOUSING, PERSONAL SERVICES

Tambov Oblast Housing Construction Inadequate

18270121 Moscow SOVETSKAYA ROSSIYA in
Russian 8 Jul 89 Second Edition p 2

[Article by N. Kravchenko, Inspector of KNK RSFSR, and special correspondent V. Kolobov (Tambov Oblast); "But What Is Behind the Facade?—The Program Zhilye-2000 Under Monitoring"]

[Text] ...As many times that we have gone along Tambov's main street, Sovetskaya, that many times have we stopped just to look at the facade of house No 70. Its pre-Revolutionary architect shaped it creatively, originally. It would seem that either a cultural institution or a children's institution has been placed in this facade. Well, and if someone lives there, then he certainly is a lucky person. We went inside and we were extremely disappointed. Wooden posts and girders propped up the sagging beams, and even the ceiling itself, from which the plaster had separated; mustiness reigned in the premises, and the windows could not be opened—they were warped....

In Tambov we were asked:

"Why is it us that are you checking up? Are matters really worse with us than with others?"

Actually, Tambov Oblast is one oblast in the republic that is satisfactory in housing construction. The plan for introducing housing was met successfully in each of the first three years of the five-year plan. In 1987 the oblast adopted a comprehensive program for housing construction, under which each family should have a separate apartment or its own home by the year 2000. The Tambovites also coped with this program for the three-year period. During this time, 33,840 families improved their housing conditions. Already today there are 16.8 square meters of living space per resident—more than the average for the RSFSR.

But everything will become known by a comparison. If one takes a look back to 4-10 years ago, then actually the achievements are remarkable. But what if one peeks behind the facade, so to speak? In 1986, 75,000 families were registered for getting apartments. At the start of this year there were...72,500 families. There were so many newcomers that the list of applicants was cut by only a small amount. What was the matter? It was explained to us that, on seeing the revival of housing construction and having become convinced that obtaining apartments is promising, even realistic, people went with their applications to the ispolkoms and trade-union committees. It stands to reason that this is a good sign. But something else is disquieting. The Zhilye-2000 Program was adopted in 1987. That is, it inevitably was based on the requirements of the preceding year, 1986. This means that by far not all needs were considered.

The situation is complicated still more by the fact that right now the oblast is in 64th place in the RSFSR in allocation of capital investment for housing construction per estimated 10,000 residents and 69th place in introduction of housing. Hence the increasing size of the dilapidated-housing inventory. At the start of 1987 there were 475,000 square meters in this category, and right now there are 55,000 more. If matters keep going this way, in the 21st century the oblast will stride forward in decrepit houses.

If the problem is to be solved, more housing must be built. Under the program, as much as 550,000 square meters must be turned over. But now the plan has brought only 520,800 to enterprises and organizations. Actually only 65,500 were turned over in the first quarter. Why?

They answer: there is not enough production capacity. At the same time a growth in housing by 487,000 square meters has been incorporated in the next five-year plan, and during the 14th Five-Year Plan half as much again. This means there must be this much capacity?

The main housing-construction combine, thanks to rebuilding, raised its capacity this year from 122,000 square meters to 160,000. Consequently, when this year's plan was formulated, the planning organs knew about the rapid appearance of additional capacity. Nevertheless, the amount that the combine was to introduce in 1989 was set without a substantial addition. Perhaps the oblast did not have enough funds? Not so: the capital investment administration of the Tambov city ispolkom could not find a contractor for 6.2 million rubles. Were there not enough material resources? Here are the figures, for last year it is true, but they are characteristic for all the years: total capital-investment assimilation was 107.8 percent, while for housing, which moreover is only a fifth of capital investment, it is 95.8 percent. There is one conclusion from this: the oblast's planning organs were not able to break the stereotype, to resist the pressure of the industrial agencies.

...In the village the picture is still more confusing. According to the program, by the start of the next century, 189,000 square meters of housing more than are planned for introduction should become unsuitable in the oblast's rayons. And this against a background of ardent calls in all forums to return people to the village, to revivify the village, to make it younger, to saturate it with housing with all the conveniences. In a talk with Ye. Lopatin, the deputy chairman of the oblast ispolkom in charge of construction affairs, we heard:

"But why do it 'from above,' if nine and a half thousand houses are standing empty today in the countryside? Yes, we have not aimed at the extensive path of developing agriculture, for the population in the countryside will be reduced."

Are not many apartments empty because they are far from cities? Some housing erected by the industrial

method are not satisfying. We went to Strelitsa, where the Boka Rural Combine sent four 25-series apartment houses.

"We were worried from the start—we even shouted bloody murder," said the master of one of them, disabled veteran V. Kurchatkin. "The neighbors consumed four tons of coal during the winter, we consumed eight. Still the walls froze solid. The chimney was straight, the coal flew through it almost intact. The roof leaked something awful—I redid it several times."

Instead of improving the series, the combine adopted the policy of rolling back housing construction. During the first four months of this year it furnished only three farmstead houses.

Here a deficiency, there a deficiency....Why would the program not stagger? In such a situation, it is impermissibly uneconomical to use full capacity. We have in mind here an experimental combine built by our German friends and praised to the skies several times by the press. It is producing right now only three-room housing. But indeed do Tambov Oblast villagers very often have many children? An analysis of the demographic situation indicates that it is convenient to make about a third of the houses in one-room and two-room versions. We realize that it is the technology...That is how engineering thought is. Although complaints can be presented against it. A plant with a promised capacity of 60 million bricks per year that was bought in Bulgaria and built in Michurinsk yields not even a fifth that much.

The housing-construction combine in Minchurinsk produces a painful impression. It has capacity for 43,000 square meters of housing, but scarcely more than half that is obtained from it, and that in a series that USSR Gosstroy forbade five years ago. Here they gladly blame the molding department: they say, it is hampering us—there is not enough space. At the same time, many meters in it are occupied by unnecessary molds and equipment, rejected structure, concrete waste, scrap metal....There is not enough heat, yet products are kept in the steaming chambers too long.

"How do you put up with this?" we ask V. Koltsov, leader of the molders brigade.

"They do not listen to us."

It became clear from the conversation that the blue-collar workers had asked that the department be given to them on a rental basis. They saw this as a way out of economic ruin. But they were refused. Yet actually, what is there to be afraid of? There are persuasive examples, including some in Tambov Oblast, that testify to the reliability of this path. V. Borobyev, the combine's chief engineer, explained the rejection by the fact that there is no possibility of guaranteeing the renters a supply of materials and power. Is this not recognition of an inability to manage? It is unfortunate that the Minchurinsk city party committee had not listened to the workers' voices.

Instead of a summary, we present lines from the decisions of the Tambov Oblast Ispolkom of the Soviet of People's Deputies, which was adopted recently: "For three years little has been done to build up the capacity of construction organizations and to develop construction-industry and building-materials industry enterprises, and, in essence, we have not undertaken to solve the program's problems." We would like to hope that this confession will have a realistic ending.

Buying Apartments Questions Answered

18270132 Moscow ARGUMENTY I FAKTY
No 27, 8-14 Jul 89 pp 6-7

[Article by L. Novikova: "I Would Like to Buy an Apartment..."]

[Text] One encounters these words in many letters to the editor. However, this desire often remains unfulfilled. Why? After all, the USSR Council of Ministers Decree "On Selling Citizens Apartments in State and Public Housing Stock Buildings," passed on 2 December 1988, states that solutions to the housing problem can be accelerated in this manner. However, union and autonomous republic councils of ministers and local soviets of peoples deputies, which should have worked out procedures for selling apartments to the public, have been very passive in this regard. In two republics—Latvia and Estonia—the councils of ministers have not even passed decrees on this subject.

The housing problem in the country is still very acute and can be solved only by using the public's resources. At present such resources are used to build only about 20 percent of the housing stock; by the year 2000 it is planned to increase this figure to 50-53 percent.

At a meeting with representatives from the mass media this was discussed by N. A. Stashenkov, first deputy head of the Central Committee Socioeconomic Department, and V. P. Liyaskin, head of the Sector for the Development of the Sociocultural Sphere and Housing Policy in this same department. They answered numerous questions by journalists. The readers will be interested in many of them, as similar questions are found in letters to ARGUMENTY I FAKTY.

[Question] Don't you think that to buy a state apartment, and not to obtain it free, as we always have, is a violation of socialist justice?

[Answer] The decision to sell citizens' apartments in the state and public housing stock does not violate this principle, as it does not infringe upon the rights of citizens waiting to obtain state apartments, the numbers of which are steadily increasing.

Apartments in newly constructed buildings can be sold to the public only after they have been filled in the usual manner. Vacant apartments can be sold, but only in buildings being rebuilt or undergoing major repairs. First

priority here belongs to citizens on the housing improvement register: first of all front rank production workers, veterans of the Great Patriotic War, families of deceased military personnel and equivalent individuals, military personnel who have reenlisted, ensigns, warrant officers and officers who have been placed on reserve or are retired from the military or internal security organs because of age, health or staff reduction, and other citizens with priority for housing.

Also, it should be kept in mind that a family with a detached house cannot acquire an apartment.

[Question] Can inhabitants of the Far North or areas equally harsh obtain an apartment in the country's central oblasts?

[Answer] Yes, if they have worked there at least 10 years. However, they cannot acquire apartments in the capitals of the union republics, in Moscow, Leningrad, Moscow Oblast or in cities with all-union and republic health resorts.

[Question] How much does an apartment cost?

[Answer] An apartment's price is determined by an appraisal commission, with a view to its qualities and a comprehensive appraisal of the parcel. This depends upon the category of building, its design, height, conveniences and upon the region's services and ecology.

Appraisal commissions are formed by ispolkoms of local soviets of peoples' deputies, enterprises, associations and organizations. If an occupied apartment is sold, its occupants participate in its appraisal. A new three-room, 42-square-meter apartment has a price of about 17,000 rubles. Citizens can pay for this over a 10-year period if they make an initial down payment of at least 50 percent. Also, autonomous republic councils of ministers, ispolkoms, enterprises, associations and organizations have the right to grant subsidies to poor families and large families acquiring their own apartment. This can be done by increasing the payment period to 15 years and reducing the down payment to 30 percent.

[Question] Where does the money from apartment sales go?

[Answer] It goes to local budgets (to develop the social sphere). If the buildings were constructed with resources from enterprises, associations and organizations it goes to these enterprises' social development funds and is used for residential and municipal construction and for the repair and rebuilding of the housing stock. If state resources are used to construct an agency owned building, then an appropriate part of the money goes to the local budget.

[Question] As is known, many enterprises and organizations can now help their workers acquire apartments—they have lots of money. But what about teachers and doctors?

[Answer] It cannot be completely excluded that some people in these categories will express a desire to buy an apartment. All conditions should be created to fulfill these desires. At the same time, workers in budget-funded organizations will continue to obtain housing from the state stock.

[Question] What if the apartment I own becomes subject to market forces where demand exceeds supply? Don't you think that in such a case it is possible to have massive speculation in housing, such a scarce good here?

[Answer] It is difficult to predict what will happen in the distant future, because at present practically no apartments are being sold to the public. At present there are three types of property in housing: state, cooperative and individual. Today cooperative apartment owners are highly indignant that they cannot buy them as individuals. They forget that the apartments are cooperative property. Nevertheless, cooperative apartment owners do have privileges.

In particular, members of a housing or housing-construction cooperative who have completely paid for their apartment can, if they vacate the apartment, obtain this money back at the set rate or transfer the apartment to relatives or other individuals with a legal right to enter the cooperative.

The rights of ownership, use and disposition of an apartment a citizen acquires in a public building are similar to those in privately owned houses.

[Question] How will privately owned apartments be repaired and operated?

[Answer] With the owners' resources, observing the standard rules and norms for operating and repairing buildings in the state housing stock.

Apartment buildings are serviced by state or cooperative housing maintenance organizations on contract with associations of individual apartment owners or citizens.

The apartment owner pays for heating, electricity, gas, water and sewage at rates set for state housing.

[Question] Is there practical experience in selling apartments to the public?

[Answer] Unfortunately, so far there is not, except in Kazakhstan perhaps. Moreover, the Central Committee receives many complaints from various regions, stating that people are not allowed to buy an apartment. This violates the Council of Ministers decree of 2 December 1988.

[Question] Will a housing law be passed?

[Answer] At present housing is regulated by 76 legal acts, the principal one of which is the "Basic Law on Housing in the USSR and the Union Republics," passed by the USSR Supreme Soviet on 24 June 1981, and the USSR TsIK [Central Executive Committee] and Council of People's Commissars decree of 4 June 1926, "On Apartment Rent and Measures to Regulate Housing Use in Cities and Villages."

Obviously, these legal acts are obsolete and we need new housing legislation. Much has been said about this at the USSR Congress of People's Deputies.

Recently there have been proposals on such legislation. It should undoubtedly reflect past experience and the numerous requests workers make to party, soviet and state organs. It is of fundamental importance that the housing legislation draft be brought up for general discussion.

FUELS

Reduced Oil Production Causes Fuel Shortages

18220210 Moscow SOTSIALISTICHESKAYA
INDUSTRIYA in Russian 3 Sep 89 p 2

[Article by Deputy Chief of the Department of Heavy Industry of the USSR Committee of People's Control, D. Shabanov: "Losses and Arrears"]

[Text] Moscow—Alarming messages are coming from various regions of our country: Motor fuel and lubricants are in short supply. The cause of the shortage is well known: The performance of the USSR Ministry of the Petroleum and Gas Industry, the main supplier of raw materials to refineries, has deteriorated sharply. Last year, the state order for oil production, including centralized deliveries, was underfulfilled by 1.2 million tons. By now, the situation has become even more complicated. In the course of 8 months, about 9 million tons were not furnished to the consumers, of which more than one-half on the state order. Of course, reductions in the volume of oil production have caused disruptions in export deliveries and in the supply of motor fuel to the national economy.

From among 12 lagging production associations within the industry, the Varyeganneftegaz in Tyumen Oblast has the greatest arrears. The association which was set up 4 years ago and intended to produce 33.5 million tons of oil a year has been continuously failing to fulfill the plan. This time, the plans were revised downward, but even this did not help. What is the reason?

Leaders of the USSR Minneftegazprom [Ministry of the Petroleum and Gas Industry], the Glavtyumenneftegaz, and the association assure us that, supposedly, the reason is objective: Actual oil reserves at the five oil pools operated are 36 percent smaller, especially at the Varyegan Pool, which was discovered as many as 20 years ago. In other words, the volume of output was calculated on the basis of unreliable data on reserves. If this is indeed so, then we should raise the alarm, conduct a special state expert study, and make the outlook for developing the complex petroleum economy in this region, and possibly in the entire industry, more precise. Otherwise, considerable capital investments may turn out to be in vain.

However, why are proposals to revise the previously confirmed industrial reserves of oil not being made in light of such serious justifications? Is this not explained by the fear of both production failures and considerable potential and opportunities of which the association Varyeganneftegaz has not been taking advantage being revealed? The question is not at all rhetorical. Here are the facts which confirm that the lag is caused by serious violations and numerous deviations from the designs, and the wasteful use of the operating pool of wells and other oilfield facilities.

More than 600 oil wells in the association have been idle for a long time while awaiting the construction of facilities, development, and repairs. This amounts to one-quarter of the operating pool accumulated. At the North Varyegan and Tagrinskoye Pools, almost one-half of the wells are idle. Some of them, several dozen, are entered in the reports as operating. To this end, [padded] oil output was reported for them.

What did the USSR Minneftegazprom do? It attempted to create an appearance of well-being by increasing the standard for idle wells from 4.2 to 14.3 percent. Just like that. Thus, the labor collectives were issued a license for mismanagement and wastefulness. In essence, this has brought about a reduction in oil output by about 1.6 million tons.

Let us add to this about 400 wells which have been envisaged by the plans but have not been built. Besides, drilling organizations have 228 wells on their balance sheets which have been awaiting development and post-accident clean-up for a long time. More than a year ago, 76 wells, each generating between 10 and 15 tons of oil a day, built at the Tagrinskoye Pool at an overall cost of 30 million rubles were mothballed. According to calculations done by specialists, they could produce 400,000 tons of oil a year at a minimum.

Such are the statistics of unjustified losses. However, this is not the end yet. Technological requirements are flagrantly violated in the association. One and a half times more water than provided by the plans has been injected into the productive strata. The bed pressure in almost all horizons exceeds the initial pressure by 5 to 10 atmospheres. All of this brings about additional difficulties in the course of drilling and repairs, premature [high] water content, and the discontinuation of gushing of the wells. At the 64 inspected wells which are not in operation due to the high water content alone, about 6 million tons of oil reserves were lost. Nobody knows where the reserves have gone.

The poor quality of construction and bad preventive servicing of the wells, belated and low-quality repairs done on them merit a separate discussion. The losses in this case as well as measured in millions of rubles and thousands of tons of oil not produced.

The behavior of the leaders of the ministry and the Glavtyumenneftegaz is surprising. In November of last year, Deputy Minister V. Grayfer confirmed the state order for the Varyeganneftegaz Association in the amount of 30.3 million tons. Three months later, the leadership of the ministry informed the USSR Minister of Finance that filling the state order is unrealistic and that the 5-year quota is not being met, and asked to have the rate of payments for production assets reduced from 8 to 2 percent. Of course, the Ministry of Finance did not consent to this.

Subsequently, with the tacit consent of V. Grayfer, General Director of the Varyeganneftegaz A. Sivak reduced the state order for oil production in 1989 by 26

percent without authorization. The abrupt decline in planned profits following such a revision was "compensated" by reducing the rate of payments to the budget from 14.1 to 8.4 percent and completely eliminating payments for assets. At the same time, the rate of contributions to the wage fund was raised, which has made it possible to pay more than 0.5 million rubles in bonuses to the employees of oilfields—all of this with the state order not being filled!

How is all of that to be viewed? Perhaps, the leadership of the ministry and the Glavtyumenneftegaz wish to conceal most serious failures in their work, their inability, and possibly reluctance, to get down to business and to look for a way out of the alarming situation in a knowledgeable manner, behind the supposedly objective reasons for the lag (they also pin hopes on such reasons in other associations).

Oil and Gas Minister Interviewed

18220198 Moscow PRAVITELSTVENNY VESTNIK
in Russian No 17, Aug 89 pp 2-3

[Interview with Leonid Ivanovich Filimonov, USSR Minister of the Oil and Gas Industry, by unnamed correspondent]

[Text] **Biographical Data:** Born in 1935, Russian. Graduated from Ufa Petroleum Institute with a major in mining engineering and specializing in developing oil and gas deposits. CPSU member. Advanced from assistant driller to chief, drilling operations administration, Sakhalinneft Association. Worked at enterprises under the Ministry of the Petroleum Industry in the Bashkir ASSR, as well as in Tyumen and Tomsk oblasts. Was general director, Tomskneft PO and then headed up Nizhneartovskneftegaz PO. Worked as first deputy minister of USSR gas industry, and since 1988 as first deputy minister of the USSR petroleum industry.

[Correspondent] Leonid Ivanovich, you recently visited the United States. Please take a look at your own sector through the eyes of the American oil men. What could they teach us?

[L.I. Filimonov] We conducted a series of active talks with the MacDermott firm regarding the establishment of a joint enterprise for developing the oil and gas deposits on the Sakhalin Island shelf. It must also be said that the Americans showed a great deal of interest in the development of our sector. We have received many proposals from American firms both with regard to founding joint enterprises as well as about cooperation in a number of lines of oil and gas production. For example, in the area of developing the maximum possible extraction of petroleum we still rank first, and our American partners are prepared to pay hard currency for our "know-how," and to conduct a joint search for ways to improve technological processes.

Nevertheless, in the eyes of our American partners we still remain a kind of clumsy, sluggish bear. Though we

possess enormous natural resources of hydrocarbons and have a mighty structure of oil-and-gas extraction enterprises as well as scientific-research institutes, we, just as before, continue to bring only crude oil to the foreign market. And this even though our country has all the prerequisites to become a leading supplier of petroleum-refining products, progressive technologies, and the latest equipment.

[Correspondent] As you and I know, the former ministries of the oil and gas industries operated in accordance with the first model of cost accounting. What will be the economic model of your combined department?

[L.I. Filimonov] Full cost accounting and self-financing has facilitated, to a large extent, the fact that in 1988 for the country as a whole 624.3 million tons of petroleum and 770 billion cubic meters of gas were extracted. During the period of a year and a half the production costs of commercial output were reduced, whereas above-plan profits amounted to approximately 2.5 billion rubles.

A number of associations and enterprises considered the so-called second model, based on the normative method of distributing income, as a more effective form of cost accounting for them. It is now being utilized by about 30 associations and enterprises.

And as regards the economic model for the ministry as a whole, it seems to me that the matter of sectorial cost accounting is not too far beyond us either. For oil and gas workers this is a real path to solving the enormous complex of social problems, to an accelerated retooling, and, finally, to equity and fairness in the distribution of earned currency [foreign exchange]. Is it not really absurd when the oil and gas industry, which provides significant receipts of such hard currency into this country, does not have the means to purchase abroad the most necessary items to solve the problems of socioeconomic development?

[Correspondent] The right of labor collectives to go beyond the framework of the associations and conduct foreign-trade operations has now been confirmed by law. Which of your enterprises already intend to abandon the ministry's "ship" and "navigate" under their own sails?

[L.I. Filimonov] There are still many very serious obstacles along the path to full economic freedom for the enterprises. I think that until the free domestic market for material and technical resources has been strengthened, and until the financial deficit disappears, the enterprises will remain with the ministries.

Even now, however, the issues of founding associations are being worked up in our sector. There are some interesting proposals, for example, by labor collectives of geophysical enterprises to have a completely independent, cost-accounting association. A similar principle is likewise possible in the sub-sector of petroleum-pipeline transport. The independent machine building which is

being developed in our sector could be completely organized according to the principle of a concern. In short, we need the initiative of the labor collectives and very careful economic development.

And the ministry is concentrating its own efforts on working up a concept for developing the sector, coordinating the finances and resources, speeding up scientific and technical progress, and rendering centralized services to the enterprises, whether in the form of banking operations or foreign-economic activities.

[Correspondent] It is a well-known fact that a government commission is working on investigating the causes of the tragic accident at the product pipeline under the jurisdiction of the Ministry of the Petroleum Industry in Bashkiria. Of course, it will report its final results.... Still, what conclusions have you drawn personally?

[L.I. Filimonov] I have had no direct relationship to the work of this government commission; other leading specialists of ours have taken part in it. However, I and everybody working in this sector—from the brigades to the ministry's apparatus—have, of course, drawn some stern lessons from this tragedy.

The accident confirms once again that there can be no alternative to safety. This must be a law and a principle in designing, building, and using the facilities of oil and gas production. Any carelessness at one of the stages of this cycle could become a detonator of disaster.

This sector is now carrying out an entire program of top-priority measures to prevent accidents in pipeline transportation. An extremely careful review is being made of the existing systems; the construction norms and operational rules are being tightened up. Closely related sectors are also actively participating in this.

[Correspondent] Leonid Ivanovich, when was the last time you went to the theater, went hunting or fishing? And, in general, how do you spend your leisure time?

[L.I. Filimonov] In replying to such questions, people used to complain about the complete lack of time for one's personal life. I used to consider that an empty phrase, but as I rose higher in my career, I myself became convinced that this is really so. Sessions and conferences consume a good half of our working day, although I am trying to change this practice, at least within the framework of the ministry. It would be better for people to learn how to use personal computers during the working time. They did not used to teach this, but age is no barrier here.

But, in general, I am fond of the theater. When I used to come to Moscow in former times, I just had to break away and go to premieres. And I used to go to the opera. While working in Sakhalin, Tomsk, and Tyumen oblasts, I loved to go fishing and hunting. But nowadays I prefer reading more. To be sure, my reading diet consists predominantly of technical and historical literature.

ELECTRIC POWER GENERATION

Kiev Suffering Shortage of Electric Power

18220201 Kiev PRAVDA UKRAINY in Russian
31 Aug 89 p 1

[Interview with N. Baranovskiy, deputy director of the enterprise for Kiev cable networks of the Kievenergo Association, by A. Maliyenko: "Electric Famine Is Threatening Kiev in the Coming Winter Period"; date and place not specified.

[Text] The capital of the Ukraine is no exception, of course. The shortage of electric power is becoming more and more perceptible in the republic as well as in the country. But the occasion for a conversation about the power supply of Kiev is serious. The city's enterprises have already experienced severe shortages more than once. But if such problems have arisen during the summertime, then it is not difficult to imagine how they will become more acute with the advent of the winter cold, when heat and light are needed much more.

The correspondent of PRAVDA UKRAINY asked N. Baranovskiy, deputy director of the enterprise for Kiev cable networks of the Kievenergo Association, to tell about the current situation and the prospects for the near future.

[Baranovskiy] I cannot remember in the last 10 years such an extremely complex situation with respect to the power supply to consumers, especially during the hours of the morning maximum. It is therefore necessary to limit overall power by 10 percent or more to meet the maximum performance. And whereas all have contributed to the strain—inhabitants turning on their electric ranges to prepare breakfast, electric transportation taking people to work, and machine tools and conveyors put into operation at the start of the morning shift—it is only industrial enterprises that have to "pay the price," for the restrictions in electrical consumption apply only for them.

[Maliyenko] The difficulties in the power supply are largely the result of the accident at the Chernobyl Nuclear Power Station. Why, after more than 3 years, has the echo of Chernobyl turned out to be so strong?

[Baranovskiy] Besides the reduction in capacities at the Chernobyl Nuclear Power Station, a number of blocks at other nuclear power stations have now been removed from operation and we cannot count on them before the end of the year. In addition, the electric power stations of the Dneprovskiy Cascade are underproducing millions of kilowatts because of limited water resources. Accordingly, the main load was on the thermal power plants. But there is a limit for them as well. At the Kiev thermal power stations, let us say, they are using equipment that not only is in need of a planned shutdown but also has exceeded its standard lifetime.

[Maliyenko] Despite everything else, there is a tendency toward an increase in the need for electric power....

[Baranovskiy] It is easy to be convinced of this. Here are some examples. At the plants imeni Lapse and Bolshhevik, they have introduced induction ovens instead of cupolas for the smelting of cast iron and electrosmelting ovens and no less than 5,000 kilowatts are required for each of these processes. The consumption of electric power by the population is also increasing rapidly. In the high-rise houses (and this is the most widespread kind of construction in Kiev), they generally install not gas ranges but electric ones in the kitchens. It is necessary to expend almost three times as much electric power for such apartments. Its expenditure for the needs of inhabitants is increasing by an average of 7 percent annually.

[Maliyenko] What restrictions are foreseen for consumers of power in the coming difficult period?

[Baranovskiy] The republic's Council of Ministers has already made an important decision in this connection: enterprises must reduce the consumption of electric power by 5 percent. But it is rather difficult to implement it, for many did not meet the rather liberal limits. In the first 6 months, for example, there were 129 recorded cases of overconsumption of electric power by a total of 600,000 kilowatt-hours and 98 cases of exceeding capacities by 9,710 kilowatts.

In the first 10 days of August alone, 11 enterprises were found to be exceeding the capacity limits and these excesses were especially great at the motor vehicle plant, at the Kievkommunmash Association and at DSK-1 [house building combine] of Glavkievgorstroy. There are no fewer instances of the inefficient use of electric power. I will name just the "record-holder," the Khimvolokno Association, where losses amount to 2,290,000 kilowatt-hours on an annual basis.

[Maliyenko] How do we combat this?

[Baranovskiy] For exceeding the limits, payment is made at a higher rate—10 times higher. But our service cannot apply any sanctions for the irrational use of power. We have to hope for the awareness of the enterprise managers. They by no means always take into account the existing situation and frequently demonstrate "foresight" of another kind. We have several letters signed by directors of the gorispolkom and republic Ministry of Power and Electrification prohibiting the application of restrictions for a number of enterprises.

We understand, of course, that it is inadmissible to reduce the output of that kind of production whose shortage can aggravate social tension. We understand that it is extremely undesirable for an enterprise adopting progressive methods to lower production indicators because of external reasons. It is nevertheless necessary to start with ourselves, showing primary concern for the elimination of losses of electric power.

Here is a typical example. The managers of the Krasnyy Rezinshchik Association also wrote a letter instructing that they be exempted from the restrictions in the consumption of electricity. At the same time, however, a

check here showed the irrational utilization of 283,200 kilowatts of electric power and reserves of 73,000 kilowatt-hours a year.

It is also necessary that we strictly implement the decision of the gorispolkom on the reduction of the consumption of electric power by more than one-third during peak hours in the state sector, which includes electric transportation, stores, cafes, institutes and other institutions.

[Maliyenko] Nikolay Ivanovich, you said that one should not count on an increase in the production of electric power in the near future. What are the ways to reduce its consumption? What needs to be done?

[Baranovskiy] The most dreadful thing for the power system is to exceed the maximum load level. If limits to consumption are not introduced in time, there will be a breakdown of the power system with the total cessation of the supply of electricity to entire regions. And its restoration requires more than 1 day and even more than 1 week under our conditions.

To avoid this, it is essential to shift loads from the morning hours to another time of day. For example, approximately half as much electric power is used between 1 am and 6 am compared with the daytime hours. It appears expedient to make the corresponding shift in the work schedule of energy-intensive equipment and serious thought should also be given to switching days off to working days in the republic's industrial centers.

Such a trend must also be encouraged economically. Proposals have long since been worked out for the establishment of different payment rates for electric power so that it will be cheaper in the nighttime hours than during the day. But no directive decision has yet been made on this account and there are no instruments for differentiated accounting. True, the Energetik Cooperative of the Kievenergo Association developed and tested panels that make it possible to perform double-rate metering of the consumption of electric power but this can be assessed merely as a confirmation of the fact that it is possible to produce such instruments under the conditions of domestic production. It is a conjecture when the enterprises of the Ministry of the Electrical Equipment Industry will deal with their mass production.

It is time, finally, to deal in fact with the introduction of energy-saving technologies. For the time being, I can name the plants and associations Vulkan, Arsenal, Kvant and Elektronmash, where effective measures have been carried out for the saving of electric power. Unfortunately the list of such enterprises is very short.

[Maliyenko] Through the economical use of electrical appliances, the inhabitants of the city can also contribute to the uninterrupted power supply of Kiev.

[Baranovskiy] Certainly. It would seem that it is not so difficult to turn off an unneeded light, to defrost a refrigerator completely, or to prefer a table lamp to a chandelier when reading and the effect from this will be noticeable. It is enough to say that if every family in Kiev will save 1 kilowatt-hour, this will be sufficient to light all the streets and roads in the city during 5 nights or for the work of the subway for 1 day. Let us also think about the fact that one kilowatt-hour is equivalent to the baking of 20 kilograms of bread, the production of 10 kilograms of cement, or the manufacture of two pairs of shoes.

I would like to take this opportunity to remind enterprise managers, labor collectives and all inhabitants of the city of the necessity of the prudent consumption of each kilowatt-hour of now-scarce electric power. The situation is now this: it is necessary to give up a little so as not to lose a lot.

Roundtable Discusses Nuclear Power, Related Issues

18220194 Moscow SOTSIALISTICHESKAYA
INDUSTRIYA in Russian 30 Aug 89 p 2

[Roundtable discussion by L. Vartazarova, doctor of Economic Sciences, G. Avrekh and S. Chernavskiy, V. Katasonov, candidates in Economic Sciences, A. Karkhov, candidate in Physical-Mathematical Sciences, Ya. Shevelev, doctor of Technical Sciences, N. Reymers, doctor of Biological Sciences, B. Kurkin, candidate of Juridical Sciences, I. Baum, candidate of technical sciences, and L. Pets, physical engineer, reported by B. Belov and Yu. Medvedev: "A Time of Question Marks"]

[Text] The editors of SOTSIALISTICHESKAYA INDUSTRIYA and the popular scientific journal of the USSR Academy of Sciences, ENERGIYA: ECONOMICS, SCIENCE, ECOLOGY, held a joint "roundtable" devoted to the problems of nuclear power.

Taking part in the meeting were: L. Vartazarova, doctor of Economic Sciences, G. Avrekh and S. Chernavskiy, V. Katasonov, candidates in Economic Sciences, A. Karkhov, candidate in Physical-Mathematical Sciences, Ya. Shevelev, doctor of Technical Sciences, N. Reymers, doctor of Biological Sciences, B. Kurkin, candidate of Juridical Sciences, I. Baum, candidate of Technical Sciences, and L. Pets, physical engineer.

Energy and the Standard of Living

[Corr.] The problem of the perspectives of nuclear power is above all a problem of the need for energy. If we can reduce it, it will probably become possible to do away with AES in general. It has been written in the new concept of development of the country's energy that its consumption will grow by a factor of 1.4-1.45 by the year 2000, and by a factor of 1.5-1.6 by the year 2010. At the same time, we know that in the developed countries, the

growth of national income has proceeded without an increase in energy consumption. Why can we not develop in this way?

[L. Vartazarova] It cannot be said that if there is an increase in consumption, that is bad. The relationship between economic growth and energy consumption can be different at different stages in the development of the economy. The main factor lies in the actual economic indicators and social well-being occurring per unit of energy. You know that the government has assigned the growth rates of national income (ND) as about 5 percent a year. This means that by the year 2000 it should double in comparison with 1985.

At the same time, the energy-intensiveness of the national income should be reduced by a factor of 1.4 by the year 2000. So far this indicator in our country is 30 percent higher than in the United States, and 50 percent higher than in Western Europe.

[G. Avrekh] Our country loves to allude to the West, where, they say, there is an increase in national income and stabilization of consumption. It is important to realize, however: We have different potentials and we are at a different stage of development. There, it is a post-industrial society, where man's basic needs for housing, transport, commodities, etc. have been satisfied. Quantitatively these problems have been solved there. Now they are thinking of quality, and much less energy is needed for this.

We have a typical industrial society, and are short of many things. Housing, motor vehicles, schools, hospitals—these are mainly metal and cement, that is, the most energy-intensive materials.

[Corr.] Many people are getting the impression that those who compile the programs think little about the main reserve for reducing consumption—energy conservation.

[L. Vartazarova] The new program incorporates a very great saving: by the year 2000, about 1,100 million tons of conventional fuel. Right now, we are consuming about 2,260 million tons of conventional fuel. I strongly wish, however, that the following be understood. Right now, they are talking only about energy conservation, emphasizing the fact that this is the most obvious path, and the power engineers, in compiling their programs, do not see it. In reality, this is the most complex path. The point is that energy conservation is an indicator of the level of development of the economy. The truth must be faced honestly: with respect to many indicators, we are a developing country. What is permitted to some is not permitted to others. After all, what is energy conservation in the end? Of course it is not "turn out the light when you leave." We consider that structural reorganization should yield 60 percent of the saving, and specific energy-conserving measures, mainly of an industrial nature and new energy-conserving equipment—40 percent. The United States, for example, needed 20-25

years, allowing for the preparatory period, to shift priorities, and to make the transition to the development of science-intensive production. The period of changing technology in the energy-intensive sector, metallurgy and chemistry, for example, was also prolonged. That is, there will be no technological revolution in either 1990 or 1995, and we will be forced to work with what we have.

[Reply] We should realize: energy conservation is expensive. The American scholar Lowens is often quoted. He spoke on television: they say that he has a miracle home, where there is complete economy, miracle-light bulbs that require almost no energy. One somehow forgets, however, that this home cost 500,000 dollars, and a single light bulb—17 dollars. Do we have this kind of money right now?

[S. Chernavskiy] You have given a good explanation of the industrial society and the difficulties of energy conservation. We all agree with this. After all, though, we have a tremendous amount of energy, no less per capita than Japan, but somehow it is not converted to the standard of living. The whole point is that we do a great deal that is unnecessary. At the same time, it is precisely with respect to energy-intensive production that we are in first place in the world.

One gets the impression that the ministries are urging on production that no one but them needs. Hundreds of thousands of construction projects, where there is no one to work? Billions of rubles worth of equipment lying on shelves? That is where order should be established.

As far as I know, the new energy program is again based on the orders of the sectors. Gosplan stamps them and issues the order to the power engineers, and they fulfill them, that is they seek energy for the excessive appetites of the sectors. Does the new program take into account the fact that there is a great deal that we do not need?

[L. Vartazarova] I think that there is a great deal that is not taken into consideration. Unfortunately, to a considerable extent, you are right. Actually, the sectors do not incorporate into their plans either serious scientific-technical progress or serious restructuring. Therefore, USSR Gosplan and we, partly, are trying, if only as experts, to evaluate their plans and replace priorities, but of course we have little power.

[S. Chernavskiy] Why do scientists, before they compile these programs, not sit down and count up what we need?

[L. Vartazarova] For 70 years we have been planning what is necessary and giving orders from our offices. Will we now also decide from the offices what is necessary? Is it, perhaps, enough? We need a new economic mechanism, a combination of directive, indicative planning and market regulation. This system will eliminate the unnecessary and the unprofitable.

Can we set this mechanism going quickly? Hardly. Anyone who thirsts for a sudden, radical change must recall 1929. Impatience and leaps forward most often lead to known unfortunate results.

[N. Reymers] No matter how much we say that energy consumption must be reduced—that is impossible. The inertia of our system will still make it increase. The organism is that way, there is no disputing it.

[Corr.] We know that in the West, particularly in the United States, during reorganization of the structure, the growth rates of the national income fell, and the energy-intensiveness was reduced. We want the national income to increase by 5 percent a year, and energy-intensiveness to drop by 2.3 percent. Many economists feel that this is unrealistic, and that we must not try running and changing our clothes at the same time.

[L. Vartazarova] I agree with this. But what can scientists do? We have looked over all the variants of power engineering development, taking account of the situation in the fuel-energy complex, particularly in nuclear power engineering, and we feel that it will not withstand over a 3 percent increase in the growth rate of the national income. This has been reported to the higher authorities, but....

[V. Katasonov] I shall add only one thing to everything that has been said: abroad, for a long time they have been planning neither the output of steel nor cement nor the production of petroleum and coal. There are no rigidly assigned levels for these, which are taken from no one knows where, and for which the departments require tremendous funds. We constantly repeat: our goal is the human being. We can in no way, however, link this goal with the plans. The impression is being created that our main purpose is steel, coal and tractors.

For example, the Swedes lay the basis of the program for social development not on the growth rates of national income, but the prolongation of human life. On this basis, they are building a tree of goals, and steel and cement appear only at the lower stages.

[Reply] Their national income level is necessary for this!

[V. Katasonov] Otherwise the game will be continued into the program.

AES: Two Sides of the Coin

[B. Kurkin] I think that nuclear power has been inefficient from the very beginning. Such fantastic funds go into it that one cannot bring oneself to publish them. The cost of the entire fuel cycle is a secret. At the same time, no one knows how to go about dismantling the AES and burying the wastes, and nevertheless they continue to build plants.

What are the alternatives to AES? Neither the sun nor the wind, certainly. They can, of course, satisfy some of our needs, but far from all of them. Thermal energy

should become the basis, but at a higher technical level, with mass introduction of units using gas with high efficiency.

Another thing. The people should themselves decide the facilities alongside which they wish to live. They must be given variants and a referendum must be put forward, without thrusting the decision down from above.

[Ya. Shevelev] The situation must not be dramatized. Tremendous sums for nuclear power—that is incorrect. I can allude to the data of V. Heffel, an eminent FRG power engineer: for a coal TES, if it is like that in the USSR, that is, without purifying harmful emissions, the cost per kilowatt-hour is 12 pfennigs, but actually 16.5. For an AES—15 pfennigs, including expenditures to take them out of operation, dismantle them and bury them forever.

Incidentally, for some reason dismantling is often misunderstood, and it is thought that a green area should be left at the site of the AES. The sums are evaluated on this basis. No one, however, is planning to pull out the plant by the roots.

After dismantling, many facilities can use some of the equipment for the most varied production facilities. As for the dismantling methods, they have already been worked out at some reactors, including those in our country.

[A. Karkhov] In discussing the alternatives to nuclear power, many people today point to gas, and the term, the "gas interval," has even appeared. Let us remember, however: in the 1960's we thought: there is a great deal of oil—but they burned it up, without thinking. Now the same thing can be repeated with gas. To burn it up in our boilers with 40 percent efficiency, however—means burning up banknotes.

We need turbines. The machine building situation, however, makes it impossible to speak about widescale development of this direction, at least in the next 10-15 years. There is no need to worry about it. If we count on gas, a large amount of metal will have to be smelted for the gigantic gas pipelines, and this, again, is energy. At the same time, it is needed first, and we will obtain the effect from gas afterwards. What will happen to the protests of the population of Yamal and the Caspian area against the development of gas deposits? All this must be taken into consideration.

[V. Katasonov] When speaking of alternatives, we often forget the international-law factor, and do not take into consideration the fact that in 3-5 years, probably, a rigid agreement on climate will be concluded. If we count, let us say, on coal, we could lose on a large scale.

[Reply] Is a TES based on gas really any better? After all, it will emit carbon dioxide, which gives a "greenhouse" effect. Scientists worldwide insist that the burning of organic fuel must be reduced right now.

[V. Katasonov] Of course, an AES does not emit carbon dioxide, but it has krypton. Unfortunately, we do not yet have confirmed methodology for calculating and comparing alternative variants. We are not able to calculate the ecological damage, the social risk, etc. So far we are choosing variants blindfolded.

[Corr.] The institutes have now been given the assignment of developing these methodologies. Let us assume that in a year or two they will present the population with this proposal: here is an AES, a TES, a GES and other plants, here are the expenditures for them—you choose. Can an AES be approached from a purely economic standpoint? After all, nuclear workers themselves say that there can be no absolute safety. Obviously, the people should decide whether an AES is acceptable in principle, even with the possibility of accidents, although they are extremely rare.

[Ya. Shevelev] This is a very simplified approach to the problem, thus distorting the whole picture. Why do you think that the people have less chance of perishing from traditional technology, from a TES using coal and gas than from an AES even with a major accident? In the second place, why do you confine yourself to power engineering?

A TES using coal? Death from coal plants stems mainly from their emission of adsorbed ash carcinogens. Purification here helps little, since the carcinogens are seated on very small particles, which are poorly held back by trapping devices. On the whole throughout the country, over 20,000 persons a year die of cancer from the coal plants—that is, coal engineering gives rise to a Chernobyl tragedy every year.

I think that an AES with an extremely low probability of accidents, that is, one in 10,000 years, is acceptable. Why? Nature has set unique experiments: the eruption of Vesuvius and powerful earthquakes like the recent one in Armenia occur on the average once every 1000 years. Nevertheless, people settle in these areas, and after the catastrophe begin to feel at home again.

[L. Pets] Remember, M.S. Gorbachev at Chernobyl got from scientists: can such an accident be repeated? Academician Ye. Velikhov replied evasively, that we are coping with reliability of the third order. This surprised me, just as does your argument about risk.

Everyone who studies the reliability of complex systems with uncommon occurrences knows that no calculation of risk can be given for them, it cannot be confirmed.

The entire experience of working to create complex technical systems with high reliability shows that its actual value, because of errors by the designers, technologists, planners and operators, always proves to be less than that calculated on the basis of the failures of individual elements.

Soviet and American specialists studying the reliability of missile systems came to this conclusion. Their conclusions are applicable to any complex systems.

[Ya. Shevelev] I know nothing about work on missile equipment. It is well known, however, that Americans make these calculations for AES and we have lagged behind seriously here, since this is a very expensive business, worth billions of dollars. After all, tens of thousands of branches of these occurrences are simulated, and each one is calculated. Are these calculations confirmed? It is estimated that the probability of an accident occurring at the Terminal Island plant, with the meltdown of active ash, but without an explosion of the backup casing for various reactors, lies in a range of $4 \cdot 10^{-4}$ - 10^{-6} a year. An accident itself does not disprove these calculations.

[Reply] And Chernobyl?

[Ya. Shevelev] None of us calculated the risk fully. This work is just beginning.

[Corr.] Still, the calculation of the risk raises serious doubts. How does one take a human being into account in them? Can instructions be devised for all cases in life? How does one evaluate the probability of a fanatic appearing who is disillusioned with life and has decided to arrange an explosion? Finally, how do you calculate terrorism?

[Ya. Shevelev] Americans take the human being into consideration. For example, the probability of error in fulfilling instructions is calculated. In general, I am particularly interested in the statistics of accidents in systems where a human being is working. There are surprising things. Let us say, the data on railroad accidents and the number of suicides practically coincide, year after year. It seems to me that, even though each person is an individual, there is some sort of conformity to principle in his most unpredictable acts. This can be taken into consideration in the calculations.

As for terrorism, technical variants of protection against it are being worked out overseas. How this possibility is incorporated into the calculation of risk, however, I do not know.

[S. Chernavskiy] I am sure that the theory of probability for systems with uncommon events is unacceptable in principle. In the second place, there can be no purely technocratic approach to an AES. It is very important to take into consideration the influence of psychological factors, which can become decisive for the development of nuclear power, even if it seems that it is economically more effective.

I will designate just a few points. For example, man considers one major accident, with a large number of victims, more dangerous than a series of small ones, amounting in total to the same and even a somewhat greater number of victims.

This phenomenon is connected with this: a catastrophe from a technical device is perceived more negatively than a natural one. For example, people settle in very dangerous seismic regions, but do not want to live near production facilities with a much lower probability of catastrophic accidents. It is clear that this factor has an extremely adverse effect on people's perception of a nuclear power plant. The matter is exacerbated by the fact that an AES is much more complex than any other power engineering technology.

[N. Reymers] It is a complex situation for mankind. It is clear that its need for energy consumption must increase, if only because there are a tremendous number of developing countries, where the consumption is still meager. Obviously, you cannot do without nuclear power, since the climate places a serious restriction on organic fuel. At the same time, nuclear power constantly hangs by a thread, since man cannot endure another Chernobyl, despite any economic computations.

[Ya. Shevelev] This sort of logic leads to a blind alley. Whether we want it or not, we must pay for comfort, and must learn to live side by side with risk. Of course, the people themselves should decide and make the choice. For example, Japan, as I understand, made its choice. Despite the atomic bombing, the high seismicity and the faults on which practically the entire country stands, AES provide about 30 percent of the energy there today. Their further increase is slated.

[L. Pets] Speaking about the future of AES must be based on one thing: we do not have the right to decide for our future descendants. By developing AES on a broad scale, we are driving future generations up a blind alley, because they will no longer be able to choose any other technology. What way out can be seen? Somewhere, on a testing ground, AES must be brought to complete safety, must be tested under all conditions. If there are no serious consequences from any accidents—only then can this technology be proposed for mankind. Technology such as AES must not be approached with old thinking.

[I. Baum] Now, when everything has become so exacerbated, we must look at the long-term future. Are we thinking, right now, about what to do if AES and TES prove to be unacceptable? I am sure—nothing! But after all, in such a case, a technology must be sufficiently worked out and perfected, using alternative sources—sun, wind—which can be circulated inexpensively. In a word, there must be a strategy in reserve.

The West is already taking this path, investing considerable funds in nontraditional sources. We are not yet thinking about it. We are continuing to allot 100 percent of our resources to the one thing, and almost nothing to the other. We are in this way improving the situation of the former very little, but we are fully excluding the development of the latter.

[V. Katasonov] I can predict that in the United States, in the next 20-30 years, at least 30-40 percent of the energy

will have to come from alternative sources. Why? Experience shows: if they are now spending tens of millions of dollars for this, in 10 years this will grow into hundreds, and in another 10 years—into billions. With respect to the structure of their scientific-research and experimental-design developments, one can judge what they will have in the 21st century.

A Shortage of Information

[Corr.] It is clear to everyone today that one of the main reasons for Chernobyl was secrecy in the sphere of nuclear power. To this day we know very little about the reasons for this accident and its consequences.

We say that we must consider variants and give people alternatives. Even the specialists who are faced with this task, however, spread their hands in dismay: a great deal of data, not only on nuclear power, but also on environmental contamination, has been covered up. This means we must be guided by foreign sources. In a word, all our talk is unthinkable without information.

[B. Kurkin] This is a painful problem. MAGATE [IAEA] has certain information on Chernobyl, but it has already been substantially "corrected" in the journal ATOM-NAYA ENERGIYA. It is issued to the people in an even more watered down form. It is felt that they do not have to know everything.

Or they convince us: there is no problem with wastes. Yet I read in all the Western booklets that there was an explosion in the waste storage under Chernobyl. I want the departments to explain what happened there, and I ask this question, but there is silence around the whole solid area.

[L. Pets] There must be access to all information on the state of the environment. Goskompriroda—the routine department, just as Goskomgidromet, has pretty well discredited itself. Of course, when the consequences of the decisions made are uncertain, if they are manifested after 30-40 years, there must be referendums.

There must be a law on access to information, and criminal responsibility should be stipulated for concealing and distorting it.

[Ya. Shevelev] There will be no economically correct information until a new economic mechanism is in operation. There should be no illusions. After all, figures reflect nothing today.

* * *

Thus, all those discussing the problems at the "round-table" ultimately came up against improving the economic mechanism. We particularly note that many specialists caution against overly optimistic predictions for this problem. The factor of time and the inertia of many processes in the economic system can prove to be decisive for a change in the structure and for the introduction of new technology. Winning an easy victory and impatience will lead to very serious consequences. On the other hand,

the possibility is not ruled out that the departments, in covering themselves by these factors, will again thrust a policy of wastefulness on society.

Two problems must be particularly singled out in the above discussion: can the probability of a major accident at an AES in principle be calculated, and are nuclear power plants acceptable, even if such an accident takes place? It seems to us that this precisely is the most painful point in nuclear power engineering today.

Letters Express Differing Views on Energy Price Increases

18220204 Moscow ARGUMENTY I FAKTY in Russian
No 36, 9-15 Sep 89 p 4

[Letters from T. Podolchak and A. Volkov]

[Text] I am not an engineer, but a rank and file worker at an electrical power distribution (oblast) enterprise. I want to repeat the slogan: "Communism is Soviet power plus the electrification of the entire country." It places great importance upon power engineering. How, in fact, has it turned out? The sector is still rolling along somewhere behind other sectors. Wages are low: 140-150 rubles. Prices for electrical energy remain the same: 1 kopeck per kilowatt hour for kolkhozes; 2 kopecks for enterprises, and 4 for the public. Generation costs average 2 kopecks per kilowatt hour, with prices differing for AES, GES and GRES. Previously we were a burden to the state and had to have subsidies to cover costs. Now we have been forced to convert to cost accounting and self-financing, etc. How can we recover our costs if we purchase energy for 2 kopecks and sell it for 1 or 2 (in bulk)? I don't want to get fat, just live. This is only the price for generating electrical energy. Is it transmitted, transformed and delivered to the customer for nothing or for our health? Therefore the decree on increasing the cost of electrical energy to enterprises and organizations is correct. The real costs increase only for kolkhozes and enterprises, while the majority of the public does not suffer, as it has long been paying 4 kopecks. The economy can exist only according to laws. It is not a cooperative that can, if it wants, increase prices 2-3 times higher than costs. It is necessary to increase prices for electrical energy so as to make it possible for enterprises, in particular electric power distribution systems, to live under conditions of cost accounting and self-financing and to pay for wage increases. Just a modest increase? The work is not that easy.

T. Podolchak, Lutsk

It was with indignation that I read "Secret Behind the Ministry Doors" in ARGUMENTY I FAKTY No. 21 [for translation see JPRS Report Soviet Union: Economic Affairs, JPRS-UEA-89-018, 26 Jun 89, p 78]. Instead of increasing prices for electrical energy, it would be better to meter its consumption at enterprises.

At the place where I have been working for 15 years there is a thermal shop with heat treating furnaces, annealing furnaces and continuous heat treating furnaces. Sometimes the furnaces are empty, but they still remain at 900

to 1000 degrees Centigrade. The continuous furnaces work together with gas generators all year around, but are loaded only 45 percent of the work time (from 0700 to 2300 hours). They operate half full every Saturday, Sunday, holiday and at night.

When I asked the management to cooperate (processing parts for other enterprises with small batches and for whom it was not profitable to buy 2 furnaces and 2-3 gas generators for spares), I was answered, "If there is 'hesitation' above—be prepared to announce maintenance."

During 15 years of work electricians have only twice received bonuses for saving electrical energy, even though posters in the plant say "Obligate yourself to save... kilowatt hours of electrical energy." It is not the price for electrical energy which should be raised, but the payment to electricians for saving it. In actuality, most often a verification inspector receives a gift in the form of enterprise products or 1-2 bottles of liquor and then signs the verification document.

A. Volkov, Moscow

Draft Law on Trade Union Rights Published*18280291 Moscow TRUD in Russian 28 Sep 89 pp 3-4*

["Draft Law of USSR on the Rights of USSR Trade Unions"]

[Text]

Title I. General Provisions**Article 1. Right To Form Trade Unions**

Workers, employees, kolkhoz members, members of other cooperatives, students of higher, secondary specialized, and vocational-technical educational institutions, regardless of race, nationality, language, sex, religious and political conviction, social status, and other differences, have the right to freely unite by forming trade unions—nonparty public organizations to protect their employment-related, socioeconomic, and cultural rights and interests.

This right is guaranteed by the present law and is exercised through the creation of trade union organizations by place of work or study in enterprises, associations, organizations, cooperatives, and educational institutions,¹ and the voluntary association of those organizations by their own choice to form trade unions on the sole condition that they abide by the bylaws of those unions.

The right to unite by forming trade unions is not subject to any restrictions except those established by laws of the USSR and the union republics.

Termination of temporary prohibition of the activity of trade unions by order of state agencies is not permitted.

Membership in trade unions shall not result in any restriction whatsoever of political, socioeconomic, and personal rights and freedoms of citizens guaranteed by Soviet laws.

Article 2. Independence of Trade Unions

In their activity, trade unions are independent of state agencies, agencies administering the economy, and of political and other public organizations, they are not accountable to them, nor are they subject to their oversight.

All trade unions enjoy equal rights. USSR trade unions independently draft and approve their own bylaws, define their structure, elect their bodies of leadership, organize their staff and their activity, and have the right to hold assemblies, conferences, plenums, and congresses without prior permission of state agencies or any other bodies and organizations.

Trade union representatives have the right to visit enterprises without hindrance in order to exercise the rights granted them by legislation and to perform the tasks defined by their bylaws.

Trade unions and their bylaws are not subject to registration with state agencies. The trade union acquires all the rights envisaged by legislation after its bylaws are approved.

The bylaws and activity of trade unions may not contradict the USSR Constitution.

Article 3. Rights of Trade Unions in the Area of International Relations

USSR trade unions have the right to collaborate with the trade unions of other countries without special permission, to join international trade union associations and organizations by their own choice, to carry out joint measures, to exchange delegations, to perform acts and campaigns of solidarity with the trade unions of other countries and with international trade union centers, and create joint enterprises and organizations.

Article 4. Legislation on Rights of Trade Unions

Legislation on the rights of trade unions consists of the present law and also other legislative acts at the level of the USSR and legislative acts of the union republics issued in accordance with them.

The legislation of the union republics may not restrict the sphere of activity of legislation at the level of the USSR concerning the rights of trade unions.

Title II. Basic Rights of Trade Unions in Managing the Affairs of the State and Civic Affairs and in Dealing With Socioeconomic Issues**Article 5. Rights of Trade Unions To Take Part in the Activity of Agencies for Administration of the State**

Primary trade union organizations and their elective bodies, higher-level elective bodies, and also conferences and congresses of trade unions have the right to nominate candidates for people's deputy at all levels of government in the USSR and to take part in the preparation and conduct of elections as provided for in legislation on elections.

Trade union members, primary trade union organizations and their elective bodies have the right to nominate their candidates to positions of leadership in the economy, to take a direct part in election of managers in enterprises (associations). It is not permitted to appoint individuals to positions of leadership in which questions of employment and development of social welfare are decided without consent of the trade union, unless they are subject to replacement through elections.

Trade unions have the right to take part when the bodies of state administration at all levels take up issues affecting the rights and interests of workers and the general public, to make their proposals on these matters, to propose that a referendum or nationwide discussion be conducted on the most important of them, and to advance alternative programs of action.

Article 6. The Right of Trade Unions To Initiate Legislation and To Take Part in the Setting of Standards

Trade unions, represented by their bodies at the union level—the congress (conference) of USSR trade unions, the All-Union Central Council of Trade Unions (AUCCTU), congresses of industrial trade unions, and their central committees possess the right of legislative initiative in congresses of people's deputies of the USSR and in the USSR Supreme Soviet; represented by republic trade union councils and committees—in congresses of people's deputies and in supreme soviets of the union republics; represented by oblast trade union councils and committees—in congresses of people's deputies and supreme soviets of the autonomous republics;² and they take part in drafting pieces of legislation on employment and socioeconomic issues.

Normative acts on employment and remuneration for work, pricing, taxation, social security, health care, and other issues related to employment and the development of social welfare may not be made by state, economic, or cooperative administrative bodies without consent of the respective trade union authorities.

Article 7. Powers of the Trade Unions in Protecting the Individual's Right To Work and in Establishing Working Conditions

Trade unions protect the right to work of Soviet citizens.

Measures to guarantee full and effective employment of the population, to improve the job placement system, to ensure social welfare guarantees for the workers are drafted and approved by the bodies for state administration jointly with the respective trade union authorities.

Working conditions may not be established nor standards regulating employment relations at the enterprise applied without consent of the trade union committee.

The trade union committee and other trade union bodies monitor the correctness of establishment of systems for remuneration of labor, the forms of material incentives, the use of funds for remuneration of labor, and settlement of accounts with the workers.

No enterprise, institution, organization, or individual subdivisions thereof may be liquidated, nor may their line of work, forms of ownership, and use be changed, nor may their production or activity be partially or completely stopped involving a reduction of the number of jobs without consent of the appropriate trade union body.

An employment contract may be dissolved on the initiative of the management of an enterprise only with prior consent of the trade union committee acting on the basis of the regulation concerning its rights, with the exception of cases of removal from their positions of the key personnel of enterprises (associations), structural units of associations and also their subdivisions on the basis of a decision of the general assembly of the respective work

force. The decision of the enterprise's trade union committee refusing consent to the discharge of a worker may not be reversed by a body of the state or by a court.

Article 8. Rights of Trade Unions in Planning Economic and Social Development

Drafts of state plans for economic and social development of the USSR, of the union republics, of sectors and branches, and of regions are submitted to the USSR Council of Ministers, the USSR Supreme Soviet, councils of ministers and supreme soviets of the union and autonomous republics, and soviets of people's deputies after their examination by the AUCCTU, the respective central or republic committees, and trade union councils concerning that part which pertains to socioeconomic indicators.

Article 9. Rights of Trade Unions in Deciding Questions of the Formation and Disposition of Profit (Income) and Economic Incentive Funds

Economic rates and standards, the establishment of benefits and subsidies, the procedure for distribution of profit (income), and the formation of use of wage funds (funds for remuneration of labor) and for economic incentives are set at all levels of administration of the state and the economy with consent of the respective elective bodies of the trade unions. Trade union bodies monitor the use of those funds.

Decisions on use of the material incentive fund (fund for remuneration of labor), the fund for social development, the fund for development of production, science, and technology, or other analogous funds are made at the enterprise jointly with the trade union committee.

Article 10. Rights of Trade Unions in Monitoring the Standard of Living of the Population

Trade unions, represented by the AUCCTU and republic trade union councils, take part in setting the basic criteria pertaining to the standard of living of the population of the USSR and the union republics, advance alternative versions, monitor enforcement of the subsistence minimum established by legislation, the annual review of levels of remuneration, pensions, stipends, and benefits as a function of the change in the price index, and the adoption of compensation payments for the population.

Social welfare standards relative to population pertaining to housing, food service enterprises, trade, everyday services, utilities and municipal services, therapeutic and preventive medical institutions, schools, Pioneer camps, kindergartens, clubs, athletic facilities, and other elements of the nonproduction sphere are established subject to consent of the appropriate trade union authorities.

Article 11. Rights of Trade Unions in the Field of Pricing

Trade unions, represented by the AUCCTU and republic trade union councils, take part in working out the main directions for improvement of retail prices of consumer goods and rate schedules for services rendered to the population. Trade union authorities have the right to monitor the application of prices and rate schedules.

Trade union councils have the right to stay decisions of enterprises and cooperatives establishing economically unsubstantiated prices of consumer goods and rate schedules for services rendered to the population and also the sale of goods in cases when prices have been raised without corresponding improvement of the performance characteristics and quality of the products.

If cooperatives set economically unsubstantiated and excessively high prices, trade union authorities have the right to submit demands to ispolkoms of soviets of people's deputies to terminate the activity of those cooperatives.

Article 12. Rights of Trade Unions in the Field of Workplace Health and Safety

Trade unions oversee and monitor healthy and safe working conditions and appropriate facilities in the workplace for the welfare of the workers.

The rules and standards pertaining to workplace health and safety, the procedure for furnishing workers the means of protecting themselves from the effect of harmful working conditions, and for the awarding of compensation payments and benefits are established subject to consent of the respective trade union authorities.

The trade unions, represented by their elective bodies and technical labor inspectorate, have the following rights:

- to halt work in enterprises and cooperatives, subdivisions thereof, and work stations and also to prohibit the operation of equipment should violations be discovered threatening human health and life;
- to verify that the designs of production operations and enterprises and also of new equipment and processes conform to the rules and standards pertaining to workplace health and safety and quotas for social and everyday services, and to submit to the responsible officials binding demands for correction of the deficiencies that exist;
- to take part in the proceedings of commissions for acceptance for operation of projects for production and nonproduction purposes, to halt activation of these projects if they do not meet the standards in effect pertaining to workplace health and safety, environmental protection, and quotas for social and everyday services;
- to prohibit the production of machines, machinery, and other types of products with design defects pertaining to workplace health and safety and the use of

supplies, equipment, or processes that have a harmful effect on human health.

The makeup of complexes of projects for production purposes to be activated is approved in agreement with the appropriate trade union authorities. Facilities for workplace health and safety, social and everyday services, and environmental protection may not be omitted from that makeup without their permission.

The AUCCTU and central trade union committees take part in working out social standards related to the creation of new equipment and processes by the appropriate agencies of the state.

Representatives of the trade unions and the technical labor inspectorate take part in investigating production accidents, issue conclusions concerning their causes and enforceable instructions on correcting violations of rules and standards pertaining to workplace health and safety, and they have the right to impose fines on the officials to blame for those violations.

The AUCCTU establishes a procedure uniform for the entire country to be followed in investigating and recording production accidents.

Article 13. Rights of Trade Unions in the Area of Social Insurance and Health Care

USSR trade unions administer social insurance and also sanatorium and health resort institutions, sanatorium-preventoria and rest institutions under their jurisdiction; they exercise social oversight over the operation of social security and health care agencies and institutions, and within the limits of their competence they have the right to independently adopt normative acts on matters pertaining to social insurance and health care of workers and members of their families.

The trade union committee:

- administers the social insurance of workers, employees, kolkhoz members, members of cooperative organizations, and other persons covered by social insurance, and it disposes of the resources allocated for those purposes;
- has the right to decide the management's reimbursement without right of appeal of expenditures to pay benefits as a consequence of work-related mutilation and occupational diseases occurring through fault of the enterprise;
- organizes sanatorium and health resort treatment and rest of the workers and members of their families and young people going to school.

Medical and public health units and other therapeutic-preventive and health-related institutions built with the resources of enterprises may not be withdrawn, unified, or reorganized or their configuration altered without consent of the trade union committee.

Article 14. Rights of Trade Unions in Solving Problems of Housing and Everyday Services for the Workers

Jointly with the management, the trade union committee:

- drafts plans and programs to provide housing and everyday services to the workers and members of their families;
- distributes housing space (including official housing) and places in children's preschool institutions;
- jointly with workers' councils, decides questions of developing food service and trade and everyday services in the workplace, creation of housing construction cooperatives and housing cooperatives, subsidiary farming operations, and the organization of fruit- and vegetable-growing partnerships and market gardening collectives;
- makes decisions on use of the resources of enterprise funds for construction of housing and other social and cultural service facilities, for the granting of loans, the repayment of credits and interest on them, for private and cooperative housing construction, repair and purchase of houses and apartments, subsidization of the cost of feeding the workers, and the furnishing of aid to fruit- and vegetable-growing and market gardening collectives.

The markup on products sold by food service enterprises in the workplace are set in agreement with the trade union committee.

Trade union authorities down to the rayon level have the following rights:

- to monitor enforcement of housing legislation in enterprises and cooperatives;
- to rescind decisions of the trade union committee and management that contradict housing legislation;
- to halt the issuance of vouchers for occupancy of housing should a violation of legislation have been discovered, notifying ispolkoms of soviets of people's deputies of this;
- to file suit in court for invalidation of housing vouchers issued in violation of law;
- to take part through their representatives on state commissions for acceptance for use of housing and social and everyday service facilities which have been built or which have undergone major repairs. The certificates of acceptance commissions are invalid without their signature.

Trade union authorities, as represented by republic and other trade union councils:

- jointly with the respective state agencies, establish the rules for keeping records of individuals in need of improved housing conditions and the supply and use of housing and payment for housing, municipal and everyday services, and transportation services.

Trade unions exercise worker control over the activity of enterprises (facilities) in the trade sector, pharmacies,

food service enterprises, everyday and municipal service enterprises, and passenger transportation enterprises in accordance with the Regulation on Worker Control of Trade Unions.

Article 15. Rights of Trade Unions in the Area of Upbringing, Culture, Athletics and Tourism, Publishing, and Use of the Mass Media

The trade unions make decisions independently on affairs in the activity of cultural-educational, theater-entertainment, physical fitness and athletic, tourist, and extramural institutions, centers for organization of leisure time, and they organize cultural services to the workers by direct contract with concert organizations.

The trade unions and their elective bodies have the right, independently or jointly with other public organizations and state agencies, to publish newspapers, magazines, and books, to use the other mass news and propaganda media, and to create and develop their own printing facilities.

Article 16. Rights of Trade Unions in Concluding Collective Contracts and Agreements

The trade union committee that represents a majority of the workers³ working in a given enterprise concludes a collective agreement with the management aimed at protecting the employment-related and socioeconomic interests and rights of the workers.

In cooperative and leased enterprises, a collective contract or agreement is concluded between the board (council) and the trade union committee.

Collective contracts or agreements may also be concluded at the level of associations (obyedineniya), enterprises, associations (assotsiatsii), concerns, and other economic structures.

Central and republic trade union committees may conclude agreements on matters of labor and social welfare with ministries, departments, and other bodies of the administration of the branch or sector.

Trade unions monitor fulfillment of collective contracts and agreements, they have the right to issue binding demands related to their fulfillment and also for calling to account officials to blame for failure to discharge obligations under collective contracts and agreements, pursuant to Article 17 of this law.

Title III. Rights of Trade Unions in Monitoring Observance of Labor Legislation and in Examining Labor Disputes

Article 17. The Right of Trade Unions To Monitor Observance of Labor Legislation

Trade unions, represented by their elective bodies and also the legal and technical labor inspectorate under their direction, have the following rights:

- to monitor observance of labor legislation;

- to issue to the management binding instructions on correction and avoidance of violations of labor legislation. The order of the labor legal inspectorate to reinstate a worker who has been unlawfully discharged and also on payment of wages to him in accordance with current legislation for the time he was forced to be idle, but no more than 1 month, is subject to immediate execution;
- to impose fines on officials guilty of violations of labor legislation in accordance with the procedure established by law;
- to file suit in court to protect the rights and legitimate interests of members of trade unions, other individuals, and work collectives, to represent their interests in courts, arbitration, and other bodies for protection of rights, and to provide them other legal assistance.

On the demand of the trade union authority (no lower than the rayon level or a trade union committee which has been granted the right of a trade union raykom), the management must cancel the employment contract with a supervisory worker or remove him from the position he occupies if he violates labor legislation and legislation on workplace health and safety, rules for allocation of housing, if he does not fulfill obligations under the collective contract or agreement, if he impedes the performance of trade union worker control, or if he ignores the demands of the trade unions on these matters.

Supervisory personnel elected to their position by the work collective are allowed to devote fulltime to that position by demand of the trade union authority indicated above on the basis of a decision of the general assembly (conference) of the respective work collective or, with its authority—by the workers' council. Managers of cooperative organizations may devote full time to that position by demand of the body indicated on the basis of a decision of the general assembly of members of the cooperative.

Article 18. The Right of Trade Union Bodies To Stay Execution of Management Decisions of Bodies for Administration of the State and the Economy and of Cooperative Bodies of Management

Trade union authorities have the right to hear communications of managers of respective bodies for administration of the state and the economy and the management bodies of cooperatives and enterprises on issues of employment and social development; to stay execution of their management decisions (right of veto) if they were made in violation of legislation on the rights of the trade unions or if they violate the rights of work collectives in the area of employment and social development or the employment-related, housing, and other social rights of workers, employees, kolkhoz members, members of other cooperatives, as envisaged by legislation of the USSR and the union republics.

The effect of the management decision is stayed from the moment the body which made it receives the decree of the respective superior trade union body, supported by arguments.

Article 19. Rights of Trade Unions in Examination of Labor Disputes (Conflicts)

In defending the interests of the majority of workers working at a given enterprise, the trade union committee examines labor disputes at the request of workers, employees, kolkhoz and other cooperative members, or the management against decisions of the commission on labor disputes, adopts decrees concerning them, and issues certificates which have the force of executive writ for forcible execution of decisions of commissions and decrees adopted by the trade union committee if the management fails to carry them out.

In examination of collective labor disputes (conflicts) concerning matters related to violation of current labor legislation, the conditions of the collective contract, establishment of new or alteration of existing socioeconomic working and living conditions, the trade union committee represents the interests of the work collective.

Article 20. The Right of Trade Unions To Declare a Strike

The trade union committee has the right to declare a strike in the name of the work collective if the legitimate demands of the workers on matters of employment and social development are not met during conciliatory procedure to examine them in accordance with the USSR Law on Procedure for Resolving Collective Labor Disputes (Conflicts).

Title IV. Guarantees of Trade Union Rights

Article 21. Duties of State and Economic Authorities, Public Organizations, and Officials To Observe the Rights of Trade Unions

State and economic authorities must observe the rights of trade unions and assist their activity.

Bodies for administration of the state and the economy are required to examine the proposals and drafts of normative acts submitted by the respective trade union authorities on matters related to their implementation of the present law and tasks set forth in their bylaws, to make decisions within the prescribed period of time, to notify them of the results of the examination of these drafts and proposals, and to furnish information gratis at the request of the trade unions concerning issues of employment and social development.

Officials guilty of violating the rights of the trade union shall be subject to disciplinary, administrative, and other penalties according to the procedure established by legislation, and they shall be subject to criminal penalties for thwarting the legitimate activity of the trade unions and their bodies.

Article 22. Procedure for Resolving Disagreements

In case of disagreements with bodies for administration of the state and the economy, cooperative administration and the management, in exercise of the powers of the trade union envisaged by this law, the trade union authorities have the following rights:

- to demand that they be taken up by superior bodies of the administration and the trade union;
- to conduct open negotiations with the bodies for administration and the management, and if necessary to present the disagreements that exist to the appropriate bodies of government for their examination;
- to hold rallies and demonstrations and preventive strikes in support of their demands.

Disagreements concerning the staying of management decisions by trade union authorities are resolved by the superior bodies of the administration and of the trade union and by the appropriate government body.

Disagreements between the trade union committee and the workers' council or the board (council) of leased, cooperative, mixed and joint enterprises are taken up by the general assembly (conference) of the collective.

Legislative acts of the USSR and the union republics, decrees and orders of the USSR and councils of ministers of the union republics, and also the acts of other bodies of government adopted in violation of the rights of the trade unions or the interests of the workers may be appealed by the AUCCTU, central trade union committees, and trade union councils to the committees for constitutional oversight of the USSR and of the union and autonomous republics.

Article 23. Guarantees for Elected Trade Union Officials and the Trade Union Aktiv

All guarantees envisaged by legislation for elected officials shall extend to persons elected to membership in trade union bodies during their performance of their civic duties envisaged by the bylaws of USSR trade unions.

Members of elective trade union bodies are exempted from production work and retain their average wage during their participation as delegates at congresses and conferences called by trade union bodies and also during the work of their plenums. Chairmen of trade union committees and members of other elective trade union bodies not exempted from their production work and trade union activists by decision of the work collective shall be granted under the conditions defined in the collective contract time free from work for which they retain their average wage in order to perform their civic duties in the interests of the collective and also time during their short-term trade union training.

Workers and employees elected members of a trade union body and not exempted from production work may not be subjected to a disciplinary penalty without prior consent of the trade union body of which they are

members, and chairmen of trade union committees, shop committees, trade union organizers, and trade union group organizers—without prior consent of the superior trade union authority. Workers and employees elected members of trade union bodies and not exempted from production work may be discharged on initiative of the management, once the general procedure for dismissal has been observed, only with the prior consent of the trade union body of which they are members, and the discharge of chairmen and members of trade union committees additionally requires consent of the superior trade union authority. Trade union organizers and trade union group organizers may be discharged on initiative of the management only with consent of the superior trade union authority.

After workers and employees exempted from work because of their election to elective positions in trade union bodies have completed their terms in their elective positions, they shall be reinstated in their previous job (position) or other job (position) with the worker's consent in the same or another enterprise. If a corresponding job (position) is not provided, the management at the previous place of work is required to pay them the average wage during the period before they find another job.

Dismissal on the initiative of the management is allowed within 2 years after workers and employees elected to membership in trade union bodies have completed their term of office and within 5 years after those elected chairmen of trade union committees have completed their term of office in trade union bodies only in accordance with the procedure envisaged by the present article.

Workers and employees exempted from work because of their election to elective positions in trade union bodies shall retain the right to remain on the list to obtain housing at their previous workplace.

Article 24. Property Rights and Financial Rights of Trade Unions

Trade union organizations and bodies, their enterprises, and organizations subordinate to trade unions possess the rights of juridical persons.

Trade unions possess, enjoy, and dispose of the property and money resources belonging to them with the right of ownership.

The property of trade unions consists of their enterprises, buildings, residential buildings and facilities, cultural-educational, sanatorium-health resort, athletic-curative, and tourist-excursion institutions, educational institutions, publishing houses, and other institutions, along with their equipment, cultural-educational resources, money, and everything else relevant to the purposes of their activities and the property belonging to them.

Enterprises, buildings, installations, and other properties classified as fixed assets and also cultural and educational resources belonging to the trade unions may not be the subject of a suit to recover debts of creditors. They are not subject to confiscation or transfer without consent of the respective trade union authorities.

The trade unions are not liable with their property for obligations arising out of collective contracts, they are not liable for the obligations of state, cooperative, and other public organizations, just as the state and its bodies and organizations are not liable for the obligations of trade unions.

The trade unions, their cultural-educational, athletic, sanatorium-health resort, tourist, and curative institutions are exempted from payment of taxes, levies, and deductions as revenues of the state.

The AUCCTU, central and republic trade union committees, and trade union councils, and organizations subordinate to them have the right to create trade union banks, insurance societies, and joint commercial enterprises and to form the necessary capital.

Article 25. Duties of the Management To Provide the Physical Conditions for Activity of the Trade Union Committee

The management must provide the following for the gratis use of the trade union committee:

- a room for work of the trade union committee, to hold assemblies and other public events, and also vehicles necessary in its activity, calculators and office machines, and communication facilities;
- buildings, rooms, installations, and other facilities, as well as centers for rest and recreation, Pioneer camps and health camps, which are on the balance sheet of the enterprise or cooperative or are leased by them, so that they can carry on their effort with the workers and their families in the fields of culture, upbringing, physical education, and restoration of health.

Acquisition of equipment, cultural and athletic inventory, housekeeping, repair, and operation of these facilities shall be at the expense of the enterprise or cooperative.

Enterprises must credit to the trade union committee resources in the amount established by legislation and also by the collective contract for development of their effort in culture and upbringing, extramural activities, physical education and athletics, tourist excursion and restoration of health, to organize the civilized leisure of the workers, employees, and members of their families and young people going to school.

Article 26. Effect of This Law and Specific Features of Its Application

On the basis of this law and other legislative acts, the trade unions, represented by the AUCCTU and with the help of central committees and republic councils of the

trade unions, shall define the specific features of application of the law as they pertain to the trade unions of individual sectors of the economy and individual regions, to the trade unions of kolkhozes and other cooperatives, leased cooperatives, mixed and joint enterprises, and educational institutions, and they shall adopt regulations on the rights of elected trade union bodies.

Footnotes

1. Enterprises (associations), institutions, organizations, kolkhozes, other cooperatives, other economic organizations with the various forms of ownership, and educational institutions are hereinafter referred to as "enterprises" with the exception of cases when the discussion pertains to the specific aspects of enterprises (associations), and the bodies for management of the organizations enumerated above, regardless of the form of ownership, are referred to as the "management."

2. The term "republic trade union councils" also covers other elective bodies for coordinating the work of trade unions within the union republic, and "republic and oblast trade union committees" also refer to other statutory bodies for guidance of sectoral trade union organizations in the republic and oblast.

3. Also extends to trade union committees of joint enterprises.

Early Version of Trade Union Draft Law Critiqued

18280275 Moscow TRUD in Russian 15 Aug 89 p 1

[Article by Yu. Petrov: "Not in Only One Year—A 'Round Table' in Krasnodar"]

[Text] The discussion was opened by G. Sukhoruchenikova, ACCTU secretary. She stressed that the Law's main purpose was not only to systematize legislation on the fundamental rights of trade unions, but to expand them in the areas of labor, its safety, in solving socio-economic tasks and, what is very important, in designating a range of questions which state organs can solve only with the participation of trade unions.

Trade union and party workers, economic specialists, scientists and lawyers participated in the discussion. Here are there opinions.

N. Rybalko, chairman, Krasnodar Kraykom, Trade Union for Oil and Gas Industry Workers: The preamble to the Law does not contain substantial (from the perspective of strengthening our organization's position) provisions for trade unions' election campaign platforms. Furthermore, it is necessary to improve the role of trade unions in developing normative acts.

I. Kutsenko, professor, head of the Department of Scientific Communism, Krasnodar Polytechnic Institute: Essentially, the draft Law talks about the status of trade unions. Shouldn't the future document nevertheless perhaps be called the Law on Trade Unions? Also, the

CPSU Program includes the role of trade unions, but the draft does not reflect their relation to the Communist Party. This is fundamental.

Kh. Mamedov, chairman, Trade Union Committee, Petroleum Refinery "Azerbaijan SSR," Novobaku: I am opposed. A legislative act does not have to repeat what is in the Trade Union Charter.

Ye. Rudikov, head of the Legal Department, Astrakhan Oblsovsprof [Oblast Trade Union Council]: The draft is an attempt to load us down with problems which are really not ours. Why, for example, must trade unions start setting prices for goods or organizing competition?

B. Ryabukhin, head of the Department for Legal Work, Stavropol Kraysovsprof: Really, it seems as if we want to embrace the unembraceable. It is as if in Article 20 we take the role of a "steam engine": "Trade unions, together with state and economic organs are to develop massive technical creativity..." Why not entrust this to scientists and practical workers? Monitoring could possibly be left to trade unions.

Or, in Article 22 it states that we will manage social insurance, that is all trade union units will, as before, have to do this, to the detriment of their other work, the main aspect being their protective function.

O. Chumakova, secretary, Krasnodar Kraysovsprof: Society is swiftly changing; therefore new questions arise regarding social insurance. Regional cost accounting is now in the offing. Republics are demanding that budgets be transferred to them. This will change the flows of insurance money. Rates in agriculture are different from those in industry. While today it works well for money to be concentrated in one unit and the difference compensated. With regional cost accounting there will be different situations in, for example, Sverdlovsk Oblast and Kazakhstan.

V. Golovatov, head of the Organization Instruction Department, Kalmytskiy Oblsovsprof: Article 19 mentions the development of economic competition. But what do we know about it? After all, we are still attempting to answer the question of how it differs from capitalist competition. It looks as if economic competition should be excluded from the draft.

V. Kashcheyev, director, Institute for Improving the Qualifications of Trade Union Cadre, VShPD [Higher School for the Trade Union Movement] imeni Shevernik: It is impossible not to agree with the opinions presented here that Articles 12, 13, 15, 17 and certain others are formulated such that it looks as if the discussion is not about the rights of trade unions, but those of the state. The draft does not give consideration to all the potentials for self-management and the right to nominate deputies to local soviets. There is no reflection of the right to conduct sociological research, although there already are institutes capable of doing this. It is necessary to more

substantially mention the trade union position in exercising rights in job placement and retraining released workers.

M. Mosiyat, machinery operator at swine farm on the Kolkhoz imeni Chapayev, Dinskiy Rayon, Krasnodarskiy Kray: We are allocated travel warrants for only 1,000 workers. I think that primary organizations should be given considerably greater rights, including in the expenditure of social insurance funds. In general, it is my view that the draft does not reflect the rights of trade unions to attain a real social equilibrium between the industrial and agrarian sectors. We have problems as great as those at factories, when the land is plowed, birds no longer land behind the tractors. They are afraid of the poisonous chemicals and fertilizers. People are working, but not receiving special pensions for dangerous working conditions.

M. Belalov, head of the Organization Instruction Department, Dagestan Oblsovsprof: Much in the draft is linked to obligations; however, the document itself is called the rights of trade unions. The draft should basically be about such rights. For example, it correctly mentions the right to stop work at an enterprise. Why then do we fear the word "strike?"

G. Cheburakhina, trade union chairman, Maykop Sewing Factory: Unfortunately, this is an incomplete right. We stopped work at our factory because people had to work under gassy conditions right next to a 200 degree heat source. During the stoppage workers received pay at their rates (wages averaged about 300 rubles). But does this really compensate their losses?

Yu. Nazarov, head of the Labor Protection Department, Krasnodar Kraysovsprof: I suggest removing everything from Article 21 that is linked to the Rulings on the technical inspection of labor and USSR Council of Ministers decrees on rules for approving objects of national economic significance. The following should be added to Article 25: "Actions of state and public organs or their representatives to compel technical and legal labor inspectors and authorized doctors to make decisions contradicting the requirements of normative acts and labor safety standards are to be prosecuted under the law." I think that such an addition will protect inspectors from direct pressure when approving objects or when stopping production. Previously there have been cases of such pressure.

Kh. Mamedov: Practical experience shows that labor collectives often become acquainted with plans after superior organizations have adopted and approved them. In order to avoid such practices in the future, I propose adding the following phrase to this article: "The draft plan of an enterprise (organization) is adopted by a superior organization only after it has been approved by the trade union committee and the labor collective council."

A. Bakanov, legal labor inspector, Krasnodar Kraysovsprof: Everything cannot be put into one normative act. One

would obtain an entire volume. The draft is heavy. Some articles contradict the Codex of Labor Law.

I. Khashagulgov, legal labor inspector, Checheno-Ingush Oblsovprof: In Article 8, Paragraph 4 of the draft central and republic trade union committees are given the right to participate in meetings of USSR and union republic councils of ministers and to have the deciding vote in examining socioeconomic issues in sectors. However, Paragraph 3 of this article gives the ACCTU the right to only participate in meetings. Thus, the ACCTU's rights are restricted compared to those of central and republic committees.

Deputy Head of the Production Work and Wages Department at the North Osetian Oblsovprof, S. Shcherbayev suggested that two pages of the journal SMENA be "entered into the protocol." These pages contain the interview with the well known advocate of brigade contract V. Serikov. In response to the question, "How do you relate to the proposal to create a workers' association to struggle against the powerful class of bureaucrats?", he answered, "And why not? If the trade unions are powerless they will not defend people..."

"This answer," explained S. Shcherbayev, "is a warning: if we will be not be decisive then somebody will replace us. In any case there is no need to give a reason for "filling in the gaps in our work..."

Industrial Accident Prevention Incentives Examined

18280278 Moscow TRUD in Russian 25 Aug 89 p 2

[Article by Ye. Pestrukhina: "How Much is a Life Worth?"]

[Text] A high voltage line broke at the Klyazma substation. A day later a group of workers from from the Pushkino Electric Power Distribution Region arrived, led by foreman A. Dvoryankin. Clarifying the situation, the senior worker went to a neighboring pump house and called the dispatcher. He granted a "yes" to the repair, after reporting that the line had been disconnected that evening.

The brush prevented getting a mechanized lift to the site of the problem. They decided to use the metal ladder at the pump house. The foreman again went to phone. Three of the youngest electricians (incidentally, not authorized to repair high voltage lines) started setting up the ladder. Then everything happened instantaneously: The steel ladder touched the line, sparks flashed... The young men were beyond help from their comrades or a doctor.

It was bitter for their families; two children were orphaned.

The accident was investigated simultaneously by the the Mosoblenergo [Moscow Oblast Energy] Energonadzor

[Energy Inspection] Commission, the technical inspectorate in the Trade Union for Workers in Local Industry and Municipal and Service Enterprises, and by the Procuracy. As often happens, all fault was placed upon those who perished. It was said that nobody should arbitrarily begin work with bare hands and without other protective devices.

Industrial accidents are officially called "unfortunate incidents." In my opinion it is not a very appropriate term—it somehow presumes fate, standing at the door of doom. The people I interviewed—in the Pushkino Power Distribution System, the trade union inspectorate and the Procuracy—simply repeated the simple conclusion. If everything should have been known ahead of time, then the victims and the others at the accident scene would have behaved differently.

But doesn't this common conviction always lead investigations and public opinion away from reality and a thorough analysis of the reasons and mechanisms in an accident? There is nothing in the world that is "simply so," including accidents and violations of rules. In spite of the outwardly fatal flow of events in the Klyazma tragedy, it nevertheless is a typical, one could even say, scientifically predictable accident.

In Tashkent a month before this somebody reconnected a damaged cable near where emergency work was being done. One person died and two were burned. A little bit later in Voroshilovgrad in broad daylight a street car approached two track workers. The driver had fallen asleep. The workers, to the last hoping that the street car would stop, could not escape. In Omsk two workers in a trench were buried by dirt which, contrary to rules, had been piled up vertically. Last year 87 percent of industrial accidents in municipal services were due to various violations of elementary safety rules.

For decades our economic development has been accompanied with similar sad statistics. Remember, the biggest catastrophes, whether the accident at Chernobyl, the ship collision near Novorossiysk, or the latest tragic event in Bashkiria, are not machinations of nature or evil forces, but the result of habitual stupid bungling and lack of discipline. What is this, a feature of human nature, or is it an acquired quality, "taught" by life, that is, a social phenomenon?

Psychology helps us look into a person's soul, understand his sources and what would seem to be the most improbable behavior. It is a science far from our technical safety services. Recall the slogan flung out by Brezhnev: "From the technology of safety to the safety of technology"? I am confident that it is still subscribed to by most specialists in labor safety, as it has rooted us in the mistaken impression that technology is the main source of danger to people. While 10-15 years ago a little less than one-third of all industrial accidents were the "fault" of machinery (that is, due to poor design or breakdown, today it is only 10-15 percent (in municipal services 12 percent). The rate of change is such that before too long

machines will become absolutely reliable. However, the main forces of safety departments at enterprises, the All-Union Scientific Research Institute for Labor Protection (the only such one in the country) and the numerous agency technical inspectorates (including those at trade unions) have been hurled into a struggle against insidious technology and the creation of means of protection against it. The human factor in our system of safety (and, by the way, in the entire economy) is, to a considerable extent, being ignored.

The prolonged disinterest in sharply altering the production economy (and the safety system as an integral part of it) to benefit people results in injuries and deaths. Our "omission," to put it mildly, is especially obvious when compared to foreign experience.

In our country, for example, young lads applying to be electricians are asked to fill out a bureaucratic application inquiring about their parents, awards, trips abroad and other items having no relationship to the job. In contrast, a civilized personnel department makes requirements about the speciality and its increased danger. It also gives special tests to determine individual potentials and capabilities. Incidentally, an obligatory question on a test about inclination to take risks is: Would you pick up a electrical wire if you were told it were dead? It cannot be excluded that those who do especially poorly on the test might be advised to select another profession (to be further away from trouble). Others will be offered psychological training in caution. Here, alas, we persistently adhere to the opinion that working specialities are simple. We accept all ranks and teach them the same thing: elementary practical habits plus cramming on the rules.

I leaf through a weighty tome on operating and safety rules for servicing electrical equipment. It is intended for nothing but a robot with a phenomenal memory. How do circulars swell up immoderately? For example, after the Klyazma accident repair workers at the Pushkino Electric Power Distribution Region were forbidden to use steel ladders (although they are not dangerous to an electrician with individual protective equipment). This is how "safety bureaucrats" protect themselves.

Psychologists warn that, in contrast to a robot, a person needs a precise and simple scheme within which he can vary his actions. In discussions with me, senior colleagues of the men who died made no effort to conceal that without violations work is impossible. The main thing is to know what can and what cannot be neglected. However, knowledge comes with experience, through trial and error, each of which may cost a life.

Our generally accepted system of paying labor even more strongly discourages the natural caution of workers. Those who fulfill and overfulfill the target or plan (it is not important at what price, after all, the "victor" is not judged) win the bonuses and honors. The economic "cake" is stronger than the administrative "stick," that is, the system of fear and intimidation about punishment

through which we maintain production discipline. The initiative-taking brigades such as, for example, those of Basov (construction) and Akkoshkarov (mining), with their progressive experience in instilling production discipline and which are supported and recommended for widespread application by the ACCTU are, in the final account, based upon strict control and administration. At the ACCTU's Labor Protection Department a mine in the Komi ASSR was cited to me as an exceptional example. At this mine they attempted to put safety on an economic basis: If workers in a section permit an accident to happen, they pay a fine to the enterprise fund; if not, they obtain a bonus. The system is very effective. However, it is not in accordance with our paradoxical laws.

Let us return to that day when the electrician I. Zhuchkov accidentally discovered an emergency at the Klyazma Substation and reported it to the dispatcher N. Strashun. As usual, in the dispatcher's office the telephone was never silent: Those same "overloaded" rules require that electricians report each trifle. Everything must be written down in a journal. Understandably, it is abbreviated, some information is lost entirely. When he got through Zhuchkov was given several orders. Among them, as written in the journal, was to disconnect the line. However, this entry has clearly been altered. Zhuchkov will later be persuaded that there was no discussion about this. There are no witnesses. A little bit further down is a short postscript: Zhuchkov reported that everything had been done. In the rush they did not say what "everything" was. Thus, according to the scheme the high voltage line had been "disconnected." The next day Dvoryankin, whose brigade had completed its work ahead of time, decided to go "do some additional work" in Klyazma. It was just before dinner; everybody was rushing. Investigation will reveal a whole bunch of violations which nobody would have detected as they did not result in trouble...

In many cases our economic system is an "assembly line for accidents," in which people are constantly tested for endurance. Accidents are as much a part of equipment, techniques and the contemporary production process as are defective goods and waste. Statistics make it possible to predict how many casualties are "intended" next year.

I know that this general conclusion will not satisfy the relatives of those young electricians who died at Klyazma. They have sought the just punishment of those whose improper actions helped cause the death of their loved ones. In the opinion of the procuracy's investigator, there are only two such guilty individuals: Dvoryankin, the foreman, who did not properly organize repairs; and an unrevealed second one, either the dispatcher, who "forgot" to give the command to disconnect the line, or the electrician who did not carry out the instruction. The careless switch operators undoubtedly deserve just punishment. However, to reduce this tragedy to the disorderly work of specific individuals (as we are accustomed to do) is to simplify the problem. For

all these, so to speak, are in the end petty malefactors which, in my view, create the potential casualties of an administrative-command system of economic management, which does not guarantee anybody safe working conditions. Today a new law on labor protection in the country is being prepared. Our ability to stop the accident assembly line depends upon its content.

"In our sector injuries have long been held to the minimum, below which it is impossible to go. In general, nobody, either here or abroad, can work without injuries," thinks V. Arkharov, secretary of the Central Committee of the Trade Union for Workers in Local Industry and Municipal and Service Enterprises.

Are the 350 deaths and 11,000 injuries, the annual "norm" for human loss in this sector, inevitable? Must we remain reconciled to there being casualties in any type of work and to annually losing almost 15,000 workers and injuring more than a half million? Also, there are the so-called bystander casualties, those who had the bad luck to be near a factory or gas pipeline when there was an accident. These total more than 100,000 dead and a million injured. No! Just as we are looking for and finding waste-free technologies, we must even more persistently strive for "waste-free" production with regard to human health and life.

Why, it is asked, do "company men," counting and saving every coin, spend solid sums on research and development on safe production and maintain much larger safety services, supplied with first class equipment, than do our enterprises? Why, upon psychologists' recommendations, do other foreign firms have lotteries, contests, prizes and other incentives for workers who expose violations? Incidentally, if workers tell a boss that there was almost an accident, either at their own or somebody else's fault, they are congratulated for this openness. Information on such instances goes to the safety service and is analyzed. This results in an estimation of potentially dangerous situations. Measures are taken to eliminate them. This is not done out of charity or love for coworkers; it is simply profitable and less costly for an owner to prevent accidents than to pay compensation to the casualties and their families or to pay increased premiums to insurance companies and huge fines to the state for violating work safety laws.

Our enterprises annually pay hospitals 160-170 million rubles for industrial accidents and even less for disability pensions. As a rule, enterprises are not concerned about bystander casualties from enterprise accidents, they are the state's concern. So, on the average each dead or injured worker costs organizations and enterprises less than 100 rubles. As blasphemous as it sounds, the dead are often less costly than the injured; they do not need hospitals or travel for treatment. The enterprise pays funeral expenses and that is all. If one may so call it, this was the "compensation" for the families of the electricians killed in the Klyazma accident. The widow of the third (left with small children) was done the maximum favor—for the loss of the breadwinner she was given a miserly pension and promised an apartment. Doesn't it thus turn out that a priceless human life thus really is devaluated?

It is time for our work safety system to be switched to economic rails and for enterprises and organizations to be given conditions under which they will be interested in eliminating deaths and serious injuries and under which violations of work safety norms will entail noticeable losses. Then there can be no doubt that anybody will take it into his head to reduce the safety services at enterprises. On the contrary, they will attract the best specialists who will not leave a single accident uninvestigated. Their recommendations will be scrupulously observed, but not like the "obligatory fulfillment" prescriptions of present inspectors.

There will be a declining need for numerous agency inspectorates. One will be enough—the state, or perhaps trade unions, but with the appropriate full authority. Inspectors will not need to "teach" industrial workers how to organize safe technical processes and will not participate in investigating all types of accidents. They will simply monitor the observation of the law for the protection of labor and apply sanctions to negligent managers.

This is not an original idea—in the lobbies specialists have long been advising this. However, judging from everything, so far the draft law gathers together existing rules scattered in various acts and instructions. Any innovation meets with sharp resistance from agencies. This will result in a retouched, glorified portrait of the existing system for work safety, based upon administrative methods. What is necessary is a law that would stop the accident assembly line.

TECHNOLOGY ACQUISITION, ASSIMILATION, COOPERATION

Soviet, Western Experience with Flexible Manufacturing Systems Compared

18230075 Moscow SOTSIALISTICHESKIY TRUD in
Russian No 7, Jul 89 pp 3-12

[Article by K. Frolov, academician, vice president,
USSR Academy of Sciences, member, CPSU Central
Committee, USSR People's Deputy: "Technological
Breakthroughs and the Economy"]

[Excerpt] [Passage Omitted]

Effectiveness of Flexible Manufacturing Systems

One of the fundamentally important directions—and one with extremely good prospects—for the further technological development of society is the development of computerization as well as the flexibility of manufacturing systems and technologies. For almost the last century and a half the evolution of technologies has been characterized by a thrust aimed at mechanization, specialization, and standardization. By 1970, however, the possibilities for further developing industry by utilizing these traditional methods had been virtually exhausted. Technological shifts began to appear in the direction of computerization and the flexibility of manufacturing systems. To a considerable extent, they were predetermined by the ever-growing complexity and diversity of manufacturing systems. This is not simply a greater complexity of the technological process, but rather a qualitatively new level of making decisions, radical shifts in the occupational-skills structure of specialists and workers employed in these sectors, different levels of quality for the items being produced. This, finally, is a fundamentally different view of information processes, the precipitous development of which has engendered a new technology—information technology.

The need to develop a comprehensive (flexible) automation of production has also been determined by the intensification of international competition, requiring the rapid renewal and assimilation of items, along with the increasing tendency to work for a specific customer, with the corresponding decrease in serial production. It is precisely along these lines that the advantages of the flexible manufacturing systems (GPS) have manifested themselves most clearly at the present time. When we consider them as a concept which is radically changing the modus operandi of enterprises—from the purchasing of materials and the formulating of orders to the distribution and sale of the finished product, we can state without exaggeration that the GPS constitutes the most important technological achievement since the beginning of the century after the emergence of the assembly line.

The first flexible manufacturing systems in our country began to be used in 1973. They were used in machining parts of the AU-1 type rotating bodies and frame

[housing] parts of the AP-1. They served as the foundation for creating the subsequent GPS series known as the ASV, ASK, and ALP. Since 1972, GPS have been widely utilized in Japan, and since the late 1970's—in the FRG, Sweden, Italy, and Great Britain. According to the estimates of the experts, there are now 700-800 GPS in the world: 21 percent of them have been set up in the United States, 19 percent in Japan, and 17 percent in Great Britain.

It should be noted that to this very day there is no single and commonly accepted definition of a GPS either on the international level or in any one of the countries concerned. Suffice it to say that in a special publication of the UN, issued in 1986 and devoted to the problems of developing GPS, 17 definitions of it are cited. Such a situation significantly complicates the comparative analysis of development and, in many cases, makes it meaningless to utilize quantitative indicators for showing the introduction of such systems. For example, according to data from United States sources, our country has set up more than 80 GPS, but, according to data from the USSR Goskomstat [State Statistics Committee], approximately 400 such complexes were introduced in the Soviet Union during 1987 alone. The only thing that is known with some relative degree of precision is that our country is among the top six countries with regard to the number of GPS in use. The work of national and international organs concerned with bringing some order into such data must be coordinated.

The problems of creating GPS ought not to be considered in isolation from the general concepts of present-day development and improvement of industry. We must clearly acknowledge that this is an important but not the only trend in the common front of working for improvement and comprehensive automation. The most effective sphere for using GPS is that of small-series and multi-product, serial production. However, as the elements of the systems improve, they are being introduced into mass and large-series complexes, for example, in the automotive industry. On the other hand, a certain foreign enterprise where custom-made X-ray units are produced, due to the introduction of GPS and working in accordance with the most progressive method of "precisely on schedule," during a three-year period succeeded in reducing its backlog by 47 percent, reducing the level of defective products by 46 percent, and reducing the expenditures on servicing the equipment by 40 percent. Thus, by proceeding from an analysis of the existing information, we can draw a conclusion regarding the possible expansion of the effective and targeted sphere for utilizing GPS.

But another problem has arisen. Along with the lack of a unified terminology, there is also an absence of any commonly accepted methodology for estimating the economic effectiveness of GPS. Juxtapositions characterize them in comparison with the traditional production system by indicators used specifically for evaluating specifically such technologies. They far from fully reflect the potential advantages of the flexible systems.

According to the data of the GDR's research center for machine-tool building, upon introduction of GPS, labor productivity has risen by 300 percent, the number of service personnel has been reduced by 40-60 percent, the production cycle has been curtailed by 50-60 percent, whereas the storage space has been decreased by 20-40 percent. They have succeeded in raising the coefficient of equipment use by 40-60 percent. According to data of the CEMA member-countries, it is evident that the introduction of GPS has increased labor productivity by a factor of 1.5-4 and brought the load [utilization factor] of the equipment up to a level of 17-20 hours a day. The time period required to come out with new items has been reduced by approximately 40 percent, while the coefficient of change has increased on the average to 2.4-2.6.

According to the data of French specialists, the introduction of GAP [flexible computerized manufacturing systems (FCMS)] allows a reduction, as compared to ordinary technology, in the time of assembly operations by 50 percent, monitoring-and-measurement operations—by 80 percent, transporting parts and materials in the shop—by 60 percent, direct labor expenditures—by 50 percent, indirect expenditures (taking into account ancillary, servicing, and other operations)—by 60 percent. An enterprise's need for engineers and designers is reduced (by means of introducing SAPR [computer-aided design systems (CADS)] by 50-70 percent, technologists—by 30 percent, programmers—by 30-40 percent, and administrative employees—by 50-70 percent.

The principal trend in the development of automating production and creating the "plant of the future" in the integration of all automated systems. In this connection, an integrated complex emerges, encompassing all the stages of creating items—from designing to producing the finished product. **The principal components of such a complex are the SAPR, the systems of planning and controlling the production load, analysis of the executive [controlling] programs, as well as the GPS itself and the product quality control.**

The use of GPS allows us to introduce a new system of organization—synchronized, automated production which functions according to the principle of "precisely on schedule." Herein the raw material, other materials, semi-finished goods, and complete sets of items are delivered to the place of machining (or assembly) precisely at the appointed time. This ensures the attainment of a considerable economic effect. The most advanced Japanese and American manufacturing systems are characterized by such indicators of increased effectiveness as the following: reserve supplies of finished products are reduced by 25 percent, raw materials by 50 percent, volumes of unfinished production—by 80 percent, time periods for delivering finished products—by 20 percent, reducing defective products—by 50-90 percent, time period for preparing a production capacity [system]—by 75 percent, curtailing its cycle—by 90 percent, and cutting down the time for reconfiguration—by 97 percent. At the plant of one firm specializing in producing

video cassette recorders (VCR's), replacing a tool when converting to any of 30 base models requires 3.5-4 seconds, i.e., slightly more than one step [cycle] of the line, which is equal to 3.5 seconds. Expenditures on the wages of the staff members here have been reduced by 46 percent, on space being utilized expenditures have been curtailed by 50 percent, and the time of continuous operation has been increased by an amount up to 90 percent. The pay-off period of the GPS for the latest models does not exceed three years.

In our country perestroika has accelerated the flow of many very important processes, ensuring the intensification of production. It is not simply a matter of a noticeable increase in the quantity of machine centers, machine tools with ChPU [numerical control], GPS, etc., but also a significant improvement of their quality. Of course, we clearly acknowledge that there are still many mistakes and omissions. For example, when speaking about the fact that machine-building output (including automated systems) which meets world standards has doubled, we understand that the base used for comparisons is quite low. We know that most GPS installed in this country during the last few years belong to the first generation, i.e., they have a limited number of automated functions. It is also well known that not only quantity determines effectiveness but also the load [utilization factor]. Unfortunately, the GPS which we have installed are often utilized in our country at an extremely low level—at 10-15 percent of their capacity. For the country as a whole, the load coefficient of the systems amounts to approximately 40 percent, with the predominant amount of work being done in one shift. But in the United States the analogous indicator exceeds 52 percent, and the work is performed on 2-3 shifts. As we can see, there is something here for us to work on. To work on purposefully, intelligently, and economically.

Let it be noted that technological shifts are not a one-time phenomenon, but rather extremely inertial, complex processes, accompanied not only by technological restructurings, but also by economic, ecological, and social consequences. Thus, for example, automating production means, in addition to everything else, **shifting the load onto the information-gathering technologies, while reducing the share of the traditional equipment. Thus, the shifts in the socioeconomic sphere are predetermined. The change in the occupational-skills composition of employees requires an up-to-date, outstripping restructuring of the educational system and a retraining of personnel to upgrade their skills.**

In examining the economic problems of introducing the means of [funds for] comprehensive automation, we must especially emphasize that this is a capital-intensive path of development. Creating GPS requires investments which exceed by 250 percent the cost of the basic equipment at a present-day enterprise, but the objective needs to speed up product renewal and satisfy more fully the individual demands of the customer do not leave us any alternative. **Comprehensive automation has become a factor in the survival of specific production systems.**

However, success can be ensured only by a systems-type solution of the interrelated problems.

One of the latter is the inadmissably low level of reliability. During the course of numerous research studies the following parameters have been established: if the time before universal lathes [machine tools] reach a complete breakdown is taken as equal to one unit, then in lathes with ChPU [numerical control] it does not exceed 0.4-0.6, while those with flexible modules are still only 0.3-0.4. This is a unique kind of "payment" for the complexity and multi-faceted design of flexible manufacturing systems. Therefore, if we wish to make sure that the GPS function at full efficiency, the time period of their operation prior to their initial breakdown must be 8-10 times more than it is for universal lathes. Reliability is, undoubtedly, extremely important, but the matter is not limited to it alone. This country has a very acute problem of providing tools. Production people cannot be satisfied with the stability and reliability of the tools. There are difficulties with the software and the servicing of the systems.

In robotics and in creating up-to-date, flexible manufacturing systems, it is utterly inadmissible to put too much emphasis on the so-called "gross output" [quantity rather than quality]. Of course, it is pleasant to read in reports that the output of such equipment in our country is constantly growing and that we are almost among the leaders in this field. But we must not be smug about this, nor, even more so, deceive ourselves. There is no heightened demand for these products. Under cost accounting and self-financing there are fewer and fewer persons desirous of purchasing expensive, slow-operating, and, furthermore, unreliable equipment. It does not fit into the programs for modernizing existing manufacturing systems. These and many other problems of organizing flexible manufacturing systems are in need of further study and solution as rapidly as possible.

[passage omitted]

COPYRIGHT: Izdatelstvo "Ekonomika", "Sotsialisticheskiy trud", 1989

AUTOMATION, AUTOMATED SYSTEMS

Poor Results of Plant Automation, Robotization Discussed

18230072 Moscow SOVETSKAYA ROSSIYA in Russian 11 Aug 89 p 3

[Article by A. Nekhamkin, candidate of economic sciences (Bryansk Oblast): "A Dummy for the Department—What the Chase After the Robotization Vogue Cost Us"]

[Text] Several years ago we announced the all-embracing integrated automation of the national economy. This occurred when the impossibility of further development

without it became evident, and, of course, in scientific circles this step of the party and the government was accepted with applause. The possibility finally of operating in a modern fashion was at last dawning.

But now years have passed and we have become convinced that this program not only was a complete flop but it also inflicted billions of rubles worth of damage on our budget. This happened for many reasons, but one of them, the most powerful in its concealed destructive force, deserves, in my opinion, special discussion. We have forgotten how important a true scientific substantiation of any project is, especially such expensive ones as automation, and we acted on the principle of the more the better. It must be said that we have prospered in this respect: while in 1970 the country had only test models of robots, in 15 years there were already 15,400 of them. We outstripped even the Japanese, and firmly took second place in the production of metalcutting machine tools, bypassing both America and the FRG. We began to produce twice as many machining centers as the Americans, four times as many as the English.

That is, superficially it was time to beat the drums. But it turned out that in automation "more" does not mean "better."

Many years ago I observed and analyzed the operation of enterprises that had been "made happy" by it: the Lyudinovo Machinebuilding Plant, the Smolensk Production Association Analitpribor, the Roslavl Automotive Components Plant, the AZLK [Motor-Vehicle Plant imeni Leninist Komsomol], the Ivanovo Machine-Tool Manufacturing Association, and others. NC machine tools, robotized complexes, and integrated automated production lines and sections began to be used here for the first time. It was at these enterprises that we were convinced of what the "flight of fancy," which had not been confirmed by a scrupulous scientific study of the project, would cost us. The first and greatest difficulty that the enterprises that had introduced various automated complexes collided with was the shortage of qualified workers.

Believe me, I would not like to paint the picture darker than it already is, but I cannot help but say that the plan for robotizing an enterprise is usually established without taking into account the magnitude of the series of the products being produced. Authoritative organs forgot that the enormous volume of output which they proposed to process by means of robots was not great in series—80 percent comprised batches of 500 to 1,000 items. Under such conditions more time was spent resetting the robots than was spent machining the parts in a nonautomated environment. In the striving to declare Soviet industry the "most automated in the world", the fact that robotics is effective only in conjunction with appropriate automated equipment was not taken into account.

The state program for comprehensive automation of the national economy did not free people and did not

simplify but, on the contrary, at times even complicated their working conditions. It was not possible to deceive the economy, despite the slogan-laden persuasiveness of what had been conceived. And although our industry actually became more respectable outwardly, in essence its whole cost-is-no-object nature only became clear more sharply.

It seems to me that for a start it must be decided what, in sum, we want to achieve by automation. What is its final purpose? What are the limits? For doubling the number of dummy robot in the departments is not a goal. If it is passed off as a result (what we brazenly have done over many years, trampling upon common sense), then this movement is blind, a method of senseless trials and costly errors.

I think that the creation of a system of comprehensive automated enterprises could be such a purpose. It is precisely the systems, indeed individual departments and automation enterprises, that are prevalent today that have not been blended into the structure of enterprises.

Only by gathering together, at least structurally, individual departments and automated enterprises throughout the country, is it possible to realize the potential opportunities of automated production. It is precisely this, in my view, which should become the nearest and most rationally accomplishable goal. And we need not chase after largeness of scale.

It is obvious that automation development will be accelerated substantially only when it gets up on its own feet, that is, when the means of automation will be produced automatically. This is the basic question. Its solution lies in the area of design and construction of several (for a start) comprehensively automated machinebuilding-type enterprises oriented to the production of automated equipment. I am convinced that we are, nevertheless, proceeding towards this. But the question is, when?

At present, the trend of quantitative growth in automation resources by the efforts of scientists and practical workers has been halted somewhat. Work on the creation of a program of comprehensive automation has been suspended, but the state of affairs has not been changed because of this.

CIVIL AVIATION

Aviation Plant's Practices Scored

18290251 Moscow PRAVDA in Russian
4 Aug 89 Second Edition pp 1, 3

[Letter to PRAVDA from Aleksandr Nikitovich Doynikov, a brigade leader in the Ulyanovsk Aviation Industrial Complex, reported by PRAVDA correspondent N. Senchev: "It Has Been a Heartache!"]

[Text] Ulyanovsk—Aleksandr Nikitovich Doynikov is a brigade leader, an assembler in the Ulyanovsk Aviation Industrial Complex. He is a delegate to the 27th Party Congress and a candidate member of a CPSU obkom. Together with the student's notebook in which the worker set forth his thoughts, he brought to the correspondents' center clippings from a large-edition plant newspaper, as well as the text of an appeal from the labor collective council, the party committee, the management, veteran communists, workers and employees of the aviation complex.

What the large-edition plant newspaper wrote about coincides to a large extent with A. Doynikov's arguments concerning the alarming situation in which the aircraft construction giant has found itself. After enlisting the support of comrades in the shop, Aleksandr Nikitovich defended his opinion at the ministry. After his trip to Moscow a commission arrived.

What finally happened? This is what Doynikov tells about in his published letter.

But first, a few words about the nature of the appeal mentioned. It outlines the situation at the enterprise in general terms. The principal emphasis is given to the warning to those workers who are annoying "high party and state officials" with letters and "see everything in the worst and hopeless light." Although Doynikov's name was not mentioned in the appeal, there is a bottom part that is his. Is a reproach fair? His letter will tell about this. [Signed] N. Senchev.

I remember well the minute that our first "Ruslan" rolled out at the plant airfield. Reports on this event appeared in the central newspapers, including PRAVDA. "The most capacity," "the most advanced," the most, the most... These descriptions which were heard then were deserved and unquestioned, of course. And the completely logical conclusion was drawn: a unique aircraft could only have been developed in the shops of a unique complex.

Indeed, the aircraft manufacturing giant established at Ulyanovsk has no equals, at least in our country, in scale and technical equipment. For your information, its cost exceeds the amount spent on construction of the BAM [Baykal-Amur Mainline]. Construction of the complex is

continuing. Production of the "Ruslans" has been organized simultaneously in it, and immediately after it, production of the new-generation Tu-204 passenger aircraft.

But when a product has been put into series production, as we say, all the sore spots of the buildup period have not disappeared; on the contrary, they have expanded and turned into menacing ulcers. How we built the "Ruslan" is known to everyone who worked at the complex at that time. It was a very difficult stage: material and technical supply was weak, work organization was poor, and there weren't enough sensible managers.

For the sake of fairness it must be said that vigorous efforts were undertaken from the very start to attract highly skilled workers to the complex from related enterprises. The prospects opened for them were tempting. They were enticed first of all by the opportunity to obtain an apartment and resolve various domestic problems for their families; in the social area nursery schools, schools, polyclinics, and athletic facilities were being built, and a large subsidiary farm was growing. In a word, a good social infrastructure was being established. And when the rear area is strong, the frame of mind is good.

But the collective did not turn out to have such a frame of mind. Last year the state order for the "Ruslan" cargo aircraft was fulfilled by less than half, if taken without adjustment. We did not turn out the Tu-204 passenger aircraft in time as planned; the aircraft is needed very much in the country. In the current 6-month period, matters are becoming even worse.

The managers of the aviation complex and the party committee have a different opinion. They believe everything is not all that bad. The complex managers usually attribute the poor management of production processes, the complete confusion in planning and material and technical supply, and the extremely poor design and engineering preparation to objective difficulties in the buildup. We cannot agree with this. The complex has been in operation for over 10 years. It is a great deal of time to put everything in order.

I will cite this example. With a monthly fund of work time of 180 norm-hours for each worker, about 500 are planned, as a rule. But no one knows exactly how we are to be provided with parts or materials. What is guaranteed may be zero, but it is actually 500 norm-hours. And then spit on quality, don't get enough sleep, or be "sick," you know. Or another case, about which brigade leader R. Aybyadulov wrote indignantly in the plant newspaper. The time for taking a fuselage out of the jig was getting closer. Before this there had been a shortage for months. We were receiving only units of hundreds of parts. When it became clear that it was impossible to "stretch out" things any further, everything was found in no time at all. Who speeded up?

The general designer, M. Pilnik, himself... When he began pestering his subordinate supervisors. Before this

everyone was sleeping. We are assembling an airplane by hand when the most advanced technical equipment is available.

For each worker directly engaged in manufacturing the product there are five ITR's [engineering and technical employees] and supervisors. Where is the return from them? I do not dispute that there are experienced, skilled persons among them, but most of them are volunteers from other enterprises who were attracted to the complex not so much by the work as by the chance to get the position and benefits of the vacancies at that time. While there was some potential for energy thanks to skilled workers at the very beginning of our enterprise's work, the personnel backbone is now falling apart. The persons who have become tired of rush work and idle time are being dismissed.

By having a poor mastery of management problems, our managers have not been able to properly evaluate the scientific organization of labor and production in a gigantic operation such as the aviation complex. By way of comparison: the NOT [scientific organization of labor] department in the Leningrad Optical-Machinery Association, as an example, is made up of 50 specialists. We operate on an incomparably larger scale with 14. There is no sense in the number, of course. Sometimes there are enthusiasts and persons zealous about their work who can work with four of them.

Our A. Makhlov, who was concerned with problems of production organization, was such a person, according to testimonials. Two years ago he was forced to leave after many years, during which he found no support for his attempts to develop a model for the best production process.

The forced departure of A. Makhlov and the deplorable situation in production organization which was making itself felt at that time set off the alarm. In this connection, communist workers spoke out at meetings, but few paid attention to them. After all, the fanfare was already being heard in honor of the first "Ruslan" turned out. But it, like those that followed, turned out to have a production cost one-third more expensive than the one produced in Kiev. The fact that the output per worker in our complex is 2.5 times less than stipulated by the plan cannot be justified, either.

The pain at our enterprise is compelling many workers to look for a cure. All the discussions within plant walls, as a rule, have led to routine measures being taken which should have given results. The measures were carried out, but the situation did not change. The workers chose me as their messenger to Moscow at that time.

So last summer I was received by A. Systsov, the minister of the aviation industry, and his deputy, V. Ivanov. In a 2-hour discussion I made several specific suggestions. Here is one of them: why doesn't the headquarters of the sector reinforce the management of the aviation complex, if only for a time. "We do not have such an opportunity," the minister responded. Another request:

there is an institute for the scientific organization of labor attached to the Ministry of the Aviation Industry. Let a group of specialists and scientists come to us for a month or two, look into our problems thoroughly, and help with recommendations. And once again a refusal.

The only thing the minister promised was to send a commission. The 40-member commission arrived. They stayed at the complex for 3 days. In a separate supplement, the plant newspaper START issued an account of the commission's meeting with representatives of the labor collective and the plan of measures with points that have long been familiar: "Reinforce, propose, and introduce."

Nearly a year after the arrival of that commission, the changes have not been made, as we assumed. And they considered that trip that I made to Moscow on the instructions of 400 employees in the shops, management, and the party committee of the aviation complex to be my personal "fault." I cannot agree with this. True, no one is bringing perestroika from the center on a platter. But there are differing circumstances. A plant of medium size is one matter, but a giant for which the sector's managers bear such responsibility, and locally as well, is another matter.

Today as never before it is advantageous for any such plant, or rather their managers, to be among the "ordinary" ones. They are practically unchecked by society if monitoring of their departments is not taken into account.

Isn't it too easy for our ministers and other specialists to throw the people's money, the workers' billions, into that same bottomless pit when new plants are built? And isn't it because of that, let us say, that a simple jar for storing paints (it is about 10 times simpler to manufacture and contains 10 times less metal than a pressure cooker) is three times as expensive. I am not even mentioning the cost of many thousands of more complicated accessories.

These are my thoughts. This is the opinion of the employees with whom I would not have discussed this. But it is especially painful that many of them think that nothing will be changed at our complex. I am convinced that changes will be made and they are needed not only from below but from the top as well. And there are more than enough grounds for intervention by the central economic organs. We have come so far in our situation that without the help of icebreakers we are unlikely to come out in clear water.

I-21 Air Navigation System Praised

*18290279a Moscow PRAVDA in Russian
26 Aug 89 Second Edition p 2*

[Report by O. Mikheyev: "A Celestial Navigator"]

[Text] **Moscow Oblast—The highest parameters of accuracy and reliability have been achieved in the I-21 precision navigation system for heavy aircraft; production of**

the system was organized in the "Ramenskiy Instrument Building Plant" Association near Moscow. Today this system is being installed in the world's largest aircraft, the "Ruslan" and the "Mriya." It will also be used as the basic system on all Soviet passenger and transport aircraft, such as the Il-62M, the Il-86, and the Tu-154M, which are flying on international routes.

In accuracy and reliability, it is one of the complex items produced by domestic instrument making that has been perfected the most. Modern passenger aircraft on international airways in compliance with ICAO—International Civil Aviation Organization—requirements must be equipped with self-contained inertial navigation systems. Only on-board systems are able to provide the pilot with accurate data not affected by static to help him fly the aircraft strictly within established air corridors over the earth.

Beginning next year, in accordance with an ICAO decision, the width of these corridors is to be sharply reduced. Over the North Atlantic, for example, it will be compressed to half its size: from 55.5 to 27.7 kilometers. The airlines whose aircraft cannot "shrink" themselves with such accuracy will be banned from flights.

But the product of the Ramenskiy instrument makers removes this problem for the airmen. For every 10,000 kilometers of flight, the I-21 system guarantees that the course deviation will not exceed 20 kilometers. This is higher than the new ICAO standards and three times as accurate as the previous similar systems.

Such an item cannot be produced in series right away, without a second thought. High production quality, skilled craftsmen, and technological equipment are indispensable conditions. The Ramenskiy association has all this.

New Sochi Air Terminal Planned

*18290279b Moscow IZVESTIYA in Russian
28 Aug 89 Morning Edition p 1*

[Report by IZVESTIYA special correspondent R. Ignatyev: "Sochi's Future Air Terminal"]

[Text] **Sochi—Construction of a large new air terminal complex has begun in the village of Moldovka, near the existing Sochi Airport.**

The question of erecting a new terminal in Sochi was discussed even at the time that the first air passenger pavilions made their appearance here—that is, about 30 years ago. These structures were built as temporary ones. And now the airport which handles the country's largest airliner, the Il-86, has been renovated, air service to other cities in our country has been expanded, flights have increased and over 4 million passengers are carried annually, and international routes have appeared. But the terminal that was planned two decades ago has not been built.

As a matter of fact, not one USSR Council of Ministers decree on development of the Sochi Airport has been carried out. But there have been several such documents which mentioned precisely this important project. Plans also made their appearance, one after the other. In time they became outdated, since an organization which could implement them was not found...

"This time the Yugoslavs undertook to help us," says P. Afanasyev, the general manager of construction of the air terminal complex. "The 'Aeroprojekt' State Planning and Surveying and Scientific Research Institute—its chief architect is V. Yermolayev—worked out the concept for the future terminal and specific proposals were made on its basis. They were presented to a number of Yugoslav firms for review. The STsT firm won the competition and a contract was concluded with it."

The building for the new terminal is shaped like a trapezoid. There are three main halls inside: two are for domestic routes (there is also an Intourist area here), and one hall is for international flights. The accommodations will be made of special materials using colored plastics, every possible kind of modern coatings, and glass. For the first time in domestic practice, all production processes involving passenger service, baggage handling, and control of airport services will be automated in the air terminal complex under construction. This system will begin operating based on computer hardware. The check-in counter has a personal computer, let us say. It is able to enter the necessary information on baggage weight, for example, make up a passenger list, and make the necessary calculations for the flight. There will be 39 electronic sectors such as this. The work positions of Aeroflot's air traffic control service are equipped with monitors and displays utilizing the most advanced communications equipment. We have brought together here practically all the innovations which are being utilized at a number of the country's major airports.

Most of the terminal building has three stories. There is also a high one of six stories. There are 600,000 square meters of useful area. If it is compared with Sheremetyevo-2, let us say, the latter has 85,000 square meters altogether. Very likely the most convenient feature here will be the fact that passengers will be able to go right into the airplane from the building on telescopic ramps. The total cost of the air terminal complex is 168 million rubles. The building itself will be erected by the Yugoslavs, but everything else will be built by Soviet construction workers. Introduction of the complex is being planned for February 1992. The foundation pit has already been prepared for construction of the foundation now.

The air passenger pavilions existing in the Soviet Union today were designed to accommodate 600 passengers per hour. When the new air terminal is built, 3,100 passengers per hour, or 6.2 million per year, will be served.

Plans Promoting USSR Aviation Industry Examined

18290279c Moscow SOTSIALISTICHESKAYA
INDUSTRIYA in Russian 29 Aug 89 p 2

[Report by SOTSIALISTICHESKAYA INDUSTRIYA special correspondent I. Klimenko: "Window Dressing Behind the Display: Reflections After the 'Aviatekhnika-89' Exhibition"]

[Text] Moscow—A year ago the world was shown the Soviet MiG-29 fighter for the first time at the international air display in Farnborough, England. The press was literally breathless from the enthusiastic comments. In June this year, after the demonstration in Paris, the aircraft created by the collective of the OKB [Experimental Design Bureau] imeni P. Sukhoy—the Su-27 combat interceptor—met with even more exclamations.

But on the eve of the air display at Le Bourget, we had two discussions with officials of the USSR Minaviaprom [Ministry of the Aviation Industry]. They essentially came down to the following. Why are we hiding the best airplanes in the world from our own people when we show a combat aircraft to the crown prince of Thailand and other passersby and demonstrate its capabilities to curious Englishmen and Frenchmen? Why can't we organize our own air display in Moscow? Why not revive those same Tushino air holidays? Why not make the airfield with aircraft displayed on it a place for meetings and discussions by specialists from the defense and civil sectors, which we know are divided today by a wall of secrecy?

The opinion of the sector's officials, including the minister, A. Systsov, was unequivocal: an air display is too expensive. But questions such as these, as subsequent events have confirmed, have concerned not only the newspaper's editorial staff and readers. Some time later, the Politburo charged the appropriate ministers and departments with holding a holiday and aircraft display at Tushino in honor of Air Forces Day.

When the minister rejected it to the editorial staff, such an instruction did not exist, and the head of the sector was taking only expenses into account from force of habit. In the ministries, they are not accustomed to taking into account the revenue from exhibitions. And chiefly because they have not learned how to conduct them. For this reason, the "Aviatekhnika-89" display at Moscow's Central Airport was doomed to be turned into expensive, although above-average, window dressing. It appears that the specialists from the Ministry of the Aviation Industry, the Ministry of Defense, the Ministry of Civil Aviation, the Moscow Soviet, and the DOSAAF Central Committee had only enough skill for several hours of the Tushino holiday. However, it was basically the pilots who displayed their skill there...

Misunderstandings began at the opening of the exhibition. A huge crowd of potential visitors had gathered at the entrance on the appointed day at the appointed hour,

but they all turned out to have no tickets. After extensively advertising the forthcoming measure, the organizers not only did not get around to informing the people about the places to obtain tickets, but did not even hit upon the idea of putting up two or three ticket booths at the entrance. The tension which was created was removed by a volitional decision (as it happens with us quite frequently: we first create difficulties for ourselves, then we struggle against them successfully)—it was decided to let everyone through!

Altogether, they insist, about a million persons viewed the exhibition. The people came in throngs, as they say. They were not stopped by rain or the cold weather. The Su-27, the MiG-29, and the combat helicopters, which were shown to us close up and openly for the first time, attracted the most interest, of course. The designers and test pilots were showered with thousands of questions by the viewers. And each one received an exhaustive answer.

Aviation is one of our few sectors where the state has retained and supported internal competition. In many respects it is precisely because of this that we have the best interceptors in the world. Elements of competition became apparent during the exhibition as well. And it must be admitted that the representatives of the OKB P. Sukhoy showed the most resourcefulness and inventiveness. The distinctive "tsyganochka" [Gypsy dance] performed by those at the Su-27 stand, although not as effective as Pugachev's "Cobra" [presumably referring to rock music] which was thundering all over the place, was a huge success with the visitors.

And the souvenirs, badges and pamphlets were also popular with the people. A faded black-and-white pamphlet with an aircraft silhouette and technical specifications, which would have cost 2 kopecks on an ordinary day, cost 50 kopecks at the exhibition! Alas, there were extremely few topical souvenirs. "Aviaeksport," which had been directed to resolve the problem with printed material, limited its activity to displaying the firm emblem at the entrance, it seems.

Commercial activity was miserable! The publicity cannot be called anything but wretched. Only the engineering and technical cooperative "Polyara" from the city of Zhukovskiy offered the aviation enthusiasts its intermediary services. Apparently, publicity for the services and capabilities of Aeroflot, or "Aviaeksport," or military transport aviation is not needed. Though this is hard to believe. And is publicity by the enterprises of the Ministry of Defense really unnecessary?! Where, if not at an exhibition of aviation equipment, do we look for interested buyers for all the hundreds of aircraft engines which are overstocked at one of the ministry's plants! (See KRASNAYA ZVEZDA of 21 April 1989). I am sure that enterprises of the Ministry of the Aviation Industry were wrong to decline to search for partners as well. Both as suppliers and consumers of assemblies, complete sets of equipment, and materials.

I discussed this topic with "the Sukhoys." They agreed unanimously, of course; we lack a great many things, especially to turn out consumer goods, but there is also a great deal that could be shared.

"Why haven't you made use of the exhibition in this case to establish commercial ties?" I asked the manager, V. Avramenko, after listening to complaints such as this.

"Well, first of all, because other tasks were set for us," Vladimir Nikolayevich said frankly. "And later, in the 2 weeks that they set aside for us to organize the exhibition, a professional would have been at a loss, but we are amateurs in such matters at present. Of course, there is something that we did not foresee, something that we did not take into account. But I repeat, the main objective for us was to show our aircraft to the public."

The exhibition can certainly be evaluated from the enthusiast's point of view. And then it must be said that it was successful: the curiosity of hundreds of thousands of Moscow residents and visitors to the capital was satisfied. By becoming more accessible and visible, aviation certainly acquired a multitude of new fans. But do we have the right today to judge such a significant step from the fan's point of view? Today, when words such as "cost accounting," "commerce," and "market" are on everybody's lips...

Do we have the right to speak about amateurishness in general, when so many reputable departments were involved in the work? After all, you cannot yourselves—put the specialists into action. How many of them were assembled under the roofs of the VDNKh [Main Committee for Exhibition of Achievements of the National Economy], the Ekspotsentr [presumably: Exposition Center], and other commercial and entertainment organizations in the capital! I am certain that they would not have had a problem with the distribution of tickets, travel allowances, or the organization of publicity...

And they would know how to dispose of the deductions from the receipts of the "Zemlyanichnaya Polyana" Cooperative, too. The cooperative sold photographs from the Tushino holiday at the exhibition—for 75 kopecks each! They offered the organizers an appropriate percentage for the commercial authorization. They gave the authorization, but refused the share.

"But what would I do with it?" asked V. Avramenko. "There is no current account for the exhibition. The plant's account? On what grounds? No... Afterward you will have all kinds of trouble... They will overwork it..."

Having become wise from past experience, Avramenko prefers to disregard the money lying under his feet. He, like thousands of his colleagues in the "defense sector," is, alas, an amateur in commerce. But for the "defense sector," our last hope, to harness itself to the country's economy and to be able to pull us back from the precipice where we are standing, oh, how we need managers not in the role of showmen, but as merchants and businessmen! How are they to become them? By

learning. By learning business first of all. Including by taking part in exhibitions such as "Aviatekhnika-89."

We will take into consideration that the first lesson in show business was not successful in getting partners for the aviation industry. But we need not despair. Right after Air Forces Day comes Rocket Forces and Artillery Day. There is an opportunity to show the public so that they can see with their own eyes what we are able to do and what we are giving up—in particular, the complexes of intermediate- and shorter-range missiles which we are destroying because we love peace. There is an opportunity to demonstrate to the taxpayers what we have achieved in developing artillery systems. But from the very beginning we must be oriented not toward the idle curiosity of the average citizen, but toward the natural interest of the designer of a trailer, who certainly will pick up something from the developers of a gun carriage.

I think there will be no shortage of souvenirs at a possible exhibition for that, either—fragments of the missiles being demolished will be sold at auction, I am sure...

An-225 'Mriya' Profiled

18290267 Moscow GRAZHDANSKAYA AVIATSIYA in Russian No 8, Aug 89 pp 21-27

[Article on construction, systems and performance of An-225 "Mriya" by its lead designer, A. G. Vovnyanko: "The 'Mriya'"]

[Text] The range of aircraft developed by the collective of the OKB [Experimental Design Bureau] imeni O. K. Antonov is extensive: from light aircraft to superheavy ones. An outstanding new achievement of the aircraft builders is the supercapacity An-225. Together with the space shuttle "Buran," it was displayed at the 38th International Aerospace Exhibition in Paris, at Le Bourget, and aroused the intense interest of the aviation community. They rightfully called it "the king of the show."

Oleg Konstantinovich Antonov, one of the first aircraft designers, understood the need to develop specialized transport aircraft to carry cargoes and equipment. So the country's first transport aircraft, the An-8, nicknamed "the flying whale," made its appearance in 1956. After this there was an entire family of "trucks": the An-12, An-22, An-26, An-32, An-72, An-74, and An-124. As a rule, cargoes have been arranged within the cabin for transport, which has also determined the appearance of cargo aircraft: they have a large-diameter fuselage, a high wing (so that the cargo floor is as close as possible to the ground), a hatch to the entire opening of the cargo cabin, a loading ramp, and facilities to provide for self-contained operation.

However, life does not stand still. In modern technology there is a steady trend toward the development of heavy, large-sized, highly productive machines: large-capacity dump trucks, cranes, turbines, generators, reactors, equipment for the oil and chemical industry, aircraft and

spacecraft, and many other items. Transporting such cargoes for long distances in fully assembled form is often impossible by rail, by motor vehicle, or by air. If provision is made to disassemble and assemble them, additional structural or engineered joints will have to be introduced, which will lead to increased mass and labor-intensiveness in manufacture, and it will shorten the service life and reliability of the aircraft and its systems as well. Moreover, additional expenditures are necessary for the assembly and adjustment and finishing work on the spot, which is practically unavoidable.

In 1981, the tradition of delivering cargoes within the cabin was broken for the first time in domestic practice. In developing the An-124 "Ruslan," a heavy transport aircraft, a complex problem arose: transporting large-sized assemblies of the central wing section and the wing tip from Tashkent to Kiev. They were shipped by mounting them on the fuselage of an An-22, for which special attachments were added to the design. Today such flights have become common. For example, the center section of the An-225, weighing about 40 tons, was delivered this way. Large components of the "Energiya" rocket booster and the fuselage of the space shuttle "Buran" also were carried externally from the manufacturing plants to Baykonur. The aircraft which performed this operation had to undergo extremely important modifications. Indeed, aircraft that have not been specialized for transporting cargoes externally have limited capacities with respect to the weight, sizes and type of loads.

The collective of the OKB imeni O. K. Antonov was given the assignment: to develop a general-purpose transport aircraft in a short period of time with minimum expenditures that is capable of carrying a broad range of available equipment and equipment being newly developed both inside and outside the fuselage. Such an aircraft was built in 3 and a half years. The vast experience of the collective, which had developed an entire family of transport aircraft, as well as utilization of the scientific and technical achievements from work on the "Ruslan" and the extensive cooperation of aircraft and engine manufacturers and the developers and suppliers of complexes and equipment, contributed to this. From its external appearance, the classification and purpose of the An-225 can be determined right away: the high wing, six engines mounted on suspended pylons, the cargo hatch in the nose, the system of mounting attachments on the fuselage and the wing center section enclosed by fairings, and the multiple-wheel landing gear.

A number of complex technical problems were resolved during the aircraft's development. In particular, providing for acceptable aerodynamic characteristics and the strength, aeroelasticity and reliability of the "aircraft-cargo" complex in flight. Inasmuch as aerodynamic drag is increased substantially when cargoes are carried outside the aircraft, the lift-to-drag ratio was worked out with special care. Through use of a thick wing with a high aspect ratio, formed with special supercritical profiles,

and because of the aircraft's configuration in the aft center-of-gravity range, we were successful in obtaining a lift-to-drag ratio of 19 by careful work on the local aerodynamics and the quality of the exterior surface. This is the highest aerodynamic efficiency that has been achieved in the designs not only of transport aircraft, but passenger aircraft as well. The best possible location for cargoes was selected by calculation and tests with models in wind tunnels. In order to ensure aerodynamic stability when the aircraft is carrying loads which are comparable in size to the fuselage or even larger, they must be positioned close to the tail section. In order not to restrict their length, the vertical empennage has a twin-fin configuration. At the same time, a number of problems in providing for strength, flutter stability, directional stability and controllability were resolved, just as when the An-22 was developed. A structural and load-carrying layout for the fuselage and the central wing section was worked out with a system of all-purpose transport attachments capable of supporting concentrated loads of several hundred tons. A remote control system for controlling the power plants and a thermostatic control and pressurization system for the cargo are being used for the first time on the aircraft. Multiple-wheel landing gear and castored main gear make it possible for the aircraft to be based and maneuvered on existing airfields. These are the dimensions of the aircraft: wing span 88.4 meters, length 84 meters, and height 18.1 meters.

The Aircraft's Structure

The problems of providing for the structures' minimum weight with the strength, service life, and survivability features that had been assigned was especially critical in designing the aircraft. This problem was resolved by extensive use of finite element analysis on a computer, as well as the use of new high-strength materials and large one-piece structures. Alloys with a component of zirconium are among the materials worth mentioning, for example. Thus, compared with the traditional D16chT, the 1161T alloy improves fatigue life and strain crack toughness properties by a factor of 1.5 and reduces the rate of crack growth by half. It is used for the undersurfaces of the wing torsion box, which has made it possible to reach very high calculated stresses (37 to 39 kilograms per square centimeter). The 1973T2 alloy has been utilized particularly extensively in the critical load-carrying structures. With improved static strength characteristics compared with the V95pchT2 alloy (3 to 4 kilograms per square centimeter), it has improved service life properties and possesses high corrosion resistance at the same time. The upper wing panels, the load-carrying torsion box of the tailplane, and the integrally stiffened skin of the fuselage are made of this alloy. For components made with forgings and stampings, the 1933T3 was used; compared with the V93pchT3 alloy, it has an improved combination of strength and service life properties. The high-strength VT-22 titanium and 30KhGSN2MA steel in vacuum-arc remelting were used for the landing gear. A number of structures are made

nearly entirely of composition materials (carbon and organic plastics and fiber glass): the fairings for the landing gear and the cargo mounting attachments, the landing gear doors, the wing-fuselage fillet, the distribution casings for the air conditioning system, the engine nacelles, and many other parts. In order to ensure high resistance to vibration and noise in the high-lift devices, the control surfaces, and the panels and leading edges of the empennage, bonded structures with ashock-absorbing, bead-forming spacer [zigovannaya prokladka] are being used.

The Fuselage of the An-225 is identical to the An-124 in diameter, but it is 7 meters longer. It has two decks: the crew, equipment, and persons accompanying the cargo are on the upper deck, and the cargo is stored on the lower deck. The cargo cabin can hold up to 250 tons of cargo. For example, 60 to 80 "Zhiguli" automobiles and shipboard containers can be carried. There is a forward cargo hatch and ramp in the fuselage for loading and unloading. The tremendous loads on the tail section of the fuselage have not made it possible to retain the aft cargo hatch, as on the An-124. The cargo cabin is equipped with upper and lower loading and unloading devices, tiedown attachments, and a device for scanning the cabin. The upper device is for lifting and stowing cargoes up to 20 tons within the cabin, and the lower device is intended for loading and unloading wheeled equipment that is not self-propelled, self-propelled equipment with wheels and tracks, and cargoes on platforms of up to 50 tons. A threshold height adjustment system provides the best possible convenience for loading and unloading. The cargo cabin is pressurized and provided with heat.

In the forward part of the fuselage are the cockpit for a crew of six (like the "Ruslan"), the electronic equipment bay, a cabin with six bunks for the relief crew, the galley, coat compartment, and toilet. When cargoes which require temperature and pressure control are being carried, an operator is added to the crew. The team which attends to the loading and unloading of cargoes that are suspended externally and looks after them are located in the aft section of the upper cabin.

The Wing of the An-225 is a composite structure, traditional for our OKB (11 integral panels along the chord). It is made of long extruded panels (up to 30 meters in length) with a tip and rolled plates. This wing meets the criteria for survivability not only with the normal two-way crack, but even when one or two of the lower panels are destroyed. The panels are linked with each other by titanium bolts installed at a tension of 0.8 to 1.2 percent, which ensures airtightness and high fatigue resistance. The tip has made it possible to do away with a sheared joint with a thousand bolts and significantly simplify the assembly.

The wing tip was copied from the An-124, with minor changes. The wing center section is a new structure 21.6 meters long and 2.4 meters high. Two power plants and flaps and spoilers have been installed on it.

The Tailplane has a span of about 30 meters, and in area it is close to the area of the wing on a transport aircraft such as the Il-76. It is made entirely of extruded panels and rolled plates.

The Aircraft's Landing Gear includes a two-strut nose gear and a 14-strut main gear (seven struts on each side). Each strut has two wheels. The four aft rows of struts for the main gear are castored for the aircraft to make turns on the ground. After the aircraft leaves the ground, the swivel parts of the castored struts are fixed in a neutral position by centering units. All struts are independent and can be lowered separately, which practically rules out a landing with the gear retracted. The landing gear have been equipped with a system for measuring gravity loads, which simplifies monitoring of the mass and centering substantially. The aircraft has carbon brakes and the pressure in the tires is 11.5 kilograms per square centimeter.

The Power Plant consists of six D18T engines with a thrust of 23.4 tons. The engine is a highly economical three-shaft ducted turbofan (fuel consumption in cruise flight is about 0.58 kilograms per kilogram of thrust per hour). The engine is equipped with systems for early detection of malfunctions. The starting system is air-driven, with automatic electrical control, providing for a normal as well as an accelerated start. Two auxiliary power plants are installed in the left and right landing gear fairings (in the rear) and provide a self-contained power supply for all the aircraft's systems and to start the engines. The fuel system includes 18 fuel tanks and their systems: for venting, single-point fueling and fuel utilization, centralized sediment draining, water warning, fuel heating, and other facilities.

The Aircraft's Systems

In order to economize on funds and reduce the periods for manufacture and testing and in view of the fact that this aircraft will be produced in a small series, complete sets of items and equipment used and perfected in the aircraft's predecessor, the An-124, have been used in the An-225 systems. Only the flight control complex, the on-board systems for automated control of the aircraft and the engines, and certain instruments were changed substantially. Other differences involve only structural features, which are related to the larger number of consumers and greater consumption (of hydraulic fluid, for example), a new installation point, and so forth.

The Control System of the aircraft includes an electrohydraulic system of wheel control with quadruple redundancy and an electric remote control system for the high-lift devices with dual redundancy. The control system also includes: an electrohydraulic system of automatic loading by control channels for the elevator and ailerons, an electromechanical system for trimming and balancing the elevator by a control channel, an electrohydraulic system for improving stability by the control channels for the rudders and elevator, and an electromechanical system for

measuring the gearing ratio in the control channels for the rudders and elevator. A display system in the cockpit shows the status of the control elements and high-lift devices.

The Hydraulic Complex consists of four independent systems and two standby hydraulic systems for controlling the flaps in the wing center section and at the wingtips, as well as the slats. The working fluid for the hydraulic systems is the AMG-10 aviation hydraulic oil. The basic supply sources are variable-consumption plunger-type pumps installed in pairs on the first, second, fifth and sixth engines. The two other engines have one pump each, which are included in the first and fourth hydraulic systems. In order to maintain the service life of the basic hydraulic pumps in flight they are relieved of their loads alternately. Torque converters and turbopump units are reserve sources of pressure for the basic systems. Electrically-driven pumping stations are connected to the essential busbar.

The Automated On-Board Monitoring System is designed to monitor the aircraft's technical condition and equipment on the ground and in flight, as well as to monitor the crew's actions. It collects and processes data on the technical status of systems and radioelectronic complexes. The monitoring results appear on the display units and in records. In addition, the monitoring system issues stimulating and control signals to the on-board systems and conducts a programmed search for the location of a failure of a structural or replaceable unit. All data is displayed at the flight engineers' work positions, and information requiring the crew's immediate reaction is sent to the pilots.

The Air Conditioning and Life-Support Systems establish the necessary comfort conditions in the cockpit and cabin for the persons accompanying the crew. When necessary, excess pressure of 0.25 kilogram-force per square centimeter is maintained in the cargo cabin, and heat is turned on as well. Air is withdrawn from the first, second, fifth and sixth engines and the auxiliary power plants.

The De-Icing System protects the most restricted sections and areas: research has established that ice formation on surfaces with similar dimensions has a negligible effect on their lift qualities and it is possible to control the aircraft successfully when the most detrimental form of ice is present. The system includes a heated air system for warming the four sections of slats on each wing and warming the leading edges of the air intakes, as well as electric heat systems for warming the high-pressure sensors and the cockpit windows.

The Centralized Electric Power Supply Systems (there are three) provide electricity for the on-board consumers. The primary sources of electricity form three functional groups: the basic sources (generators on the engines), auxiliary sources (auxiliary power plant generators), and emergency sources (storage batteries). Each successive

group of sources provides power—with certain limitations—for the consumers when the preceding group fails. There are three groups of busbars for the distribution network, much the same as for the sources of electricity. When all sources are operating normally, each system is divided into two sides. When any of the sources fail, there is an automatic backup of their busbars from the sources that are operating on that side or the opposite side.

The Remote-Control System (SDU) serves to significantly reduce forces on engine controls and increase the accuracy of power settings. It is a dual-channel electrical system. A mechanical linkage is installed in parallel with it. The main channel of the SDU is connected to the network at 200/115 volts and the backup channel is connected to the direct-current network at 27 volts. Each of the channels provides for movement of the throttles at the rate of 40 degrees per second. In order to increase the speed of movement in the takeoff and landing approach stages, both channels are switched on, and the speed at which the change in position takes place is doubled. Normally the SDU operates in the main channel, but when it fails the backup channel is automatically switched on. When both channels fail, the mechanical linkage is provided for control.

The Thermostatic Control and Pressurization System. A number of cargoes carried externally in the transportation process require either that temperatures above zero or excess pressure be maintained. In particular, the central unit of the "Energiya" rocket booster is able to accept a load lengthwise only. Since the unit is positioned horizontally for transport and excess pressure is provided in it for strength, it is pressurized. For the rocket's first launches its elements were provided on an aircraft which did not have such a system. For this reason, the tanks had to be pressurized with the carefulness of medical ampules. The An-225 carries the central unit in fully assembled and complete condition. As a result of air and vibration loads, depressurization and loss of pressure is possible, and consequently, the rigidity as well. In order to ensure safety in transporting such cargoes, a thermostatic control and pressurization system has been installed on the aircraft which monitors the condition of the cargoes and ensures that the temperatures and pressure set are maintained during transport.

The Navigation and Communications Equipment Complex installed in the aircraft equips it for all-weather operation at any point on the globe.

* * *

All the systems listed are highly automated and require minimum intervention from the crew. This is made possible by 34 on-board computers in all the vitally important systems of the aircraft, a high degree of redundancy for the systems and their monitoring, and the reliable operation of the complete units.

Comparative Data for Heavy Aircraft of the OKB imeni O. K. Antonov

Parameter	An-22 "Antey"	An-124 "Ruslan"	An-225 "Mriya"
Maximum takeoff weight, in tons	250	405	600
Maximum weight of cargo, in tons:			
—inside the fuselage	80	150	250
—externally	—	—	250
Range with cargo inside fuselage, in kilometers:			
—with maximum load	5,000	4,500	2,500
—with a load of 200 tons	—	—	4,500
Cruising speed, in kilometers per hour	560	850	700 (850 with external load)
Runway length required, in meters	2,400	3,000	3,500
Dimensions of cargo cabin, in meters:			
—height	4.4	4.4	4.4
—width	4.4	6.4	6.4
—length	29	36	43

The First Flights

In developing such a huge aircraft and with the extensive cooperative activity involved, naturally, there were a considerable number of difficulties. Thus, in order to transport the central wing section from Tashkent to Kiev, we had to practically restore and modify an An-22 aircraft all over again while we were building the An-225; for 23 years the An-22 had gone through the hard school of testing and operation under extreme conditions in various climates and under different basing conditions. The huge dimensions and weight of the An-225 wing center section, positioned in immediate proximity to the An-22's propellers, required careful study of the airflow conditions in wind tunnels. For this we had to enclose the center section itself with fairings and install a special fairing of complex geometrical shape between the cargo and the aircraft in the tail section. In December 1987, under instrument weather conditions, the first center section, attached to the upper surface of an An-22 fuselage, was delivered to Kiev. The most complex and final stage in assembling and finishing the aircraft had begun.

Work to prepare for the aircraft's first flight was conducted while it was being assembled: construction of test stands for working out failure situations and handling conditions and peculiarities, static testing of new structural elements, and wind tunnel tests of different models with cargoes mounted externally. The extremely complicated dynamic configuration of the aircraft (six engines suspended on pylons on the wing, a twin-fin tail, gigantic dimensions and weight) required not only a significant increase in the amount of calculation and experimental research on flutter characteristics, but a higher level of precision in this research. As a result, considerable economy was obtained in the structural weight (several tons).

On 30 November 1988, at a press conference marking the completion of construction, General Designer P. V. Balabuyev presented the An-225 to the community for the first time. And on 3 and 4 December, after degreasing and running up the power plants, the aircraft made its first independent moves at the plant airfield: taxiing, turns, and ground runs up to 200 kilometers per hour, raising the nose gear. After this, a number of additional operations were conducted on the ground: weighing and determining the center-of-gravity position, subjecting the fuselage to an air pressure test, and so forth. At this time the entire crew, A. V. Galunenko, the aircraft commander; S. A. Gorbik, the copilot; A. M. Shuleshchenko, the senior flight engineer; V. A. Gusar, the flight engineer; S. F. Nechayev, the navigator; V. A. Beloborodov, the radio operator; and M. G. Kharchenko, the chief flight test engineer, were delivering cargoes in an An-124 from Kiev and the FRG to the people of Armenia, who were suffering from the catastrophic earthquake. I want to mention in passing that most of the operations to deliver cargoes to Armenia were carried out with the aircraft of our OKB (the An-12, An-22, and An-124).

The first flight of the An-225 had been set for 20 December 1988, but weather conditions did not permit this. And the weather was not especially favorable on 21 December, either: a low overcast and a quartering headwind charged with snow. But the aircraft is on the runway all the same. The forward cargo hatch is opened and two vehicles drive through it (to provide for the center of gravity that had been set). After a takeoff run of about 950 meters, the An-225 easily lifted off the runway.

On the first flight, which lasted for 1 hour and 14 minutes, the high-lift devices were retracted, the handling characteristics were determined, the static pressure error corrections were made more precise, and the operation of the systems and on-board equipment were

checked in succession. After the landing, when asked by the general designer how the flight went, aircraft commander A. V. Galunenko joked: if the designers continue designing and developing production this way and the engineers continue perfecting aircraft, test pilots simply will not be needed. In a word, it was an ideal flight. The performance and behavior of the aircraft were in full accordance with what was incorporated in the mathematical model and worked out on the test stand, and the forces on the control wheel when the nose gear lifted off were even less.

Ahead of the aircraft and crew was (and still is) a concentrated program of flight testing, including with cargoes carried externally. And on 28 December the "Mriya" made its second flight.

On 20 February 1989, M. S. Gorbachev visited the Ukrainian capital. Right after his arrival at the Borispol Airport he inspected the An-225 at its parking place. P. V. Balabuyev described the aircraft's mission and basic features. He noted that development of the An-225 is not only a bold flight of engineering thought, but a breakthrough to the most advanced technologies. After this there was a demonstration flight. M. S. Gorbachev congratulated the collective of the OKB imeni O. K. Antonov on its great achievement, and the dream that had come true. "Your 'Mriya' is an integral part of perestroika," he said.

Three months after the first flight, on 22 March 1989, the designers, testers, engineers and technicians prepared the aircraft for an unusual flight—to break world records. After just "a taste of the sky," the "Mriya" entered into competition with famous aircraft! As of this day it had made 43 flights for a total of 63 hours. The testers had carefully checked the stability and handling and the operation of the aircraft's systems and equipment, including with "programmed" malfunctions. They had to "steal up to" the maximum speed values and Mach number especially carefully. It was necessary to very carefully calculate the structural damping to rule out the appearance of flutter.

After carefully weighing the cargo, which totaled 156.3 tons, and filling the fuel tanks to the top, the "Mriya" took off. The readout of the highest achievements began right after it left the ground. Entering into competition with the American Boeing 747-400, the recordholder for maximum takeoff weight (404.8 tons), the An-225 outdid it by 104 tons. The Il-86 had held a record for 8 years by carrying a cargo of 65 tons on a circuitous route of 2,000 kilometers. In flying from Kiev to Leningrad and return, the An-225 beat this record. In addition, it accumulated another 52 record indicators. After reaching an altitude of 12,410 meters, it left behind its older brother "Ruslan" as well. In the end, 109 records were set, not 106 as predicted. The "Mriya" landed at the airport in 3 hours and 45 minutes. The on-board recording equipment showed that the flight had proceeded normally.

But the An-225 was not built for records, of course. Its basic purpose is to deliver cargoes and equipment. And it can carry cargoes that not one existing form of transportation can handle. The delivery to a location of unique large-sized items, fully assembled and completed at the plants of manufacture, will make it possible to significantly accelerate the pace at which they are put into operation, to reduce expenditures, and to improve the quality of work.

COPYRIGHT: "Grazhdanskaya aviatsiya", 1989

Lessons Learned from Tu-144 Noted

18290243 Moscow PRAVDA in Russian
28 Jul 89 Second Edition p 3

[Interview with Colonel General of Aviation (Reserve) Yu. Mamsurov, by PRAVDA correspondent V. Bedov: "The Tu-144 Has Been Left on the Ground: Was the Prestigious Project Doomed to Failure?"]

[Text] *Where did the supersonic Tu-144 airliners disappear to? It has now been about 10 years since anything has been heard about them. One of them is exhibited in a museum. The rest, about a dozen, were put in a permanent parking place at one airfield near Moscow. They are lined up forlornly in a circle with their sharp drooping noses aimed at one point. The airliners, capable of flying at twice the speed of sound, have turned out to be lifeless, and their "chained parking place" represents a picture of the defeat of a prestigious project in the history of civil aviation.*

Why has the major state program to develop a supersonic passenger aircraft turned out to be forgotten? Why is a kind of conspiracy of silence maintained around the Tu-144? Col Gen Avn (Reserve) Yu. Mamsurov answers the questions asked by our correspondent, V. Bedov.

Passenger flights in the Tu-144 were begun in the fall of 1977 from Domodedovo Airport. I arrived at the airport every Thursday early in the morning, before the technical personnel began work on the basic and reserve aircraft. I had the responsibility, as the deputy minister of civil aviation, for the condition of the aviation equipment in the sector and the reliability of its work. Despite the fact that passenger flights in the supersonic aircraft were begun punctually, according to schedule, we had to keep a constant eye on them. The engineers and technicians prepared the aircraft for flights with great care. The demand was extremely strict on everyone taking part in the flights.

On the eve of the ChP [accident] I was on an official trip to organize the aircraft support for the work of our government delegation during the Vladivostok summit meeting. When I returned to Moscow they reported to me on the terrible disaster involving one of the Tu-144 aircraft. During a routine test flight there was a catastrophe because of equipment failure. Three crew members were killed and Honored Test Pilot E. V. Yelyan was in serious condition.

Meanwhile, personnel at the Domodedovo Airport were readying a supersonic aircraft for a routine passenger flight to Alma-Ata. On Monday, in accordance with "a Kremlin order" [po "kremlevke"] I contacted the chief designer of the aircraft, Aleksey Andreyevich Tupolev, and asked him to explain the reason for the disaster and what else the KB [design bureau] recommends to be done on the Tu-144's being prepared for flight. Tupolev promised to give me an answer. The aircraft that had survived the crash, although in seriously damaged condition, did not catch fire when it crash landed outside the airfield. The test instrumentation recording on the aircraft had remained intact.

However, time passed by but the designer remained silent; no reports were received from him. At the end of the day on Wednesday the chief designer came to the Ministry of Civil Aviation, but he did not bring the materials which we had been impatiently and anxiously waiting for.

The question arose point-blank: do we have the right to authorize further flights in the Tu-144 with passengers? The final decision rested with me, in accordance with my position. During those painful hours, as it turned out later on, I was faced with deciding whether Aeroflot's flagship was to fly one more time or spend the rest of its existence on the ground.

With a heavy heart I lifted the telephone to inform A. V. Bolbot, the deputy minister of the aviation industry, of my decision—there can be no mention of continuing flights unless the design bureau submits engineering solutions which guarantee passengers' safety.

At about 2100 hours (I was still at work) Vasilii Aleksandrovich Kazakov, the minister of the aviation industry, telephoned me. Unfortunately, he said sadly, the design bureau had not worked out the necessary preventive measures yet. At the same time, the minister proposed that an "OK" be given for one flight the next day, Thursday. He explained his intercession by the fact that he did not want to upset the Bolshoy Theater troupe. In response I asked him: well, what if, God forbid, there is no Bolshoy Theater troupe? What then?

We provided an Il-62 instead of the supersonic aircraft for the Bolshoy's passengers.

Alas, this is how the brief operation by the world's first supersonic passenger aircraft on Aeroflot routes came to an end.

By the way, I have had occasion to work with all the first-class military and civil aircraft designed by A. N. Tupolev, beginning with the Tu-2 bomber. Why did the renowned collective of specialists of the Tupolev Design Bureau have a failure this time? I will reply in a military manner, perhaps, straightforwardly but unequivocally. The failure of any project has never been accidental, in my view. I maintain that during the years that the Tu-144 project was under development, there were vast unutilized potentials in domestic scientific, design, raw

material, and production resources. This is the real reason for the drama, not the feebleness of our aviation science and industry by any means.

But the specific reason for the aircraft's failure, I am convinced, is as follows. The chief designer of the aircraft, A. N. Tupolev, who was already advanced in years, permitted the kind of organizational miscalculations that I would call a drama of succession. He gave support to those who were young and energetic, but who did not have the necessary experience and sufficient competence as designers. The experienced and wise designers such as S. M. Yezer, D. S. Markov, and L. L. Smelikov turned out to have been pushed aside.

Unfortunately, the persons with authority in the Ministry of the Aviation Industry and the government did not exercise strict supervision over the course of affairs involving the Tu-144. The atmosphere of the stagnant years, when shifting the blame to someone was "good form," made many managers who possessed considerable power compliant—to the detriment of the work. The time when there was still a chance to correct something was lost. They relied on the high prestige of the Tupolev firm. But after the aircraft was put into series production, the institutes of the Ministry of the Aviation Industry, acting in concert with the Tupolev Design Bureau, attempted to get out of hot water by any methods, ones that were not always sensible.

In my view, the failure also is on the conscience of the managers of the TsAGI, the TsIAM [Central Aerohydrodynamics Institute imeni N. Ye. Zhukovskiy, Central Aviation Engine Building Institute imeni P. I. Baranov], and other organizations. In the critical situation of a complex developing an aircraft of particular complexity, the curator of domestic aviation and deputy chairman of the USSR Council of Ministers, Leonid Vasilyevich Smirnov, was not up to the occasion, either.

The eminent Soviet aircraft designer Vladimir Mikhaylovich Myasishchev, developer of the first supersonic strategic missile carrier of domestic manufacture, the M-50, which was shown in flight in the 1961 air display at Tushino, anticipating the development of aviation, had conducted a thorough analysis and provided brilliant substantiation of the capacity to develop a supersonic passenger aircraft. His design bureau had developed the scientific work for a supersonic airliner—its aerodynamics, technology, navigation, engine construction, and so forth. The Myasishchev Design Bureau worked out the unified concept that development of a long-range supersonic aircraft which flies at twice the speed of sound is inconceivable without an engine of minimum dimensions and maximum specific thrust, and the fuel consumption in cruise flight should not exceed 1.16 kilograms per kilogram of thrust per hour.

These essential requirements formulated precisely by V. M. Myasishchev were not put into effect on the Tu-144 aircraft. It is even more disappointing that the supersonic passenger aircraft "Concorde" developed jointly by the

British and French "coincided" completely with Myasishchev's concept, confirming its correctness. Myasishchev proved to be the one that prophesied the "Concorde," but not the domestic aircraft.

There was a time when the USSR was the leader in ultra-long-range passenger aircraft. Our aircraft manufacturing had accomplished a substantial amount of work when it came close to studies for development of the Tu-144. They were begun in the early 1960's. In 1961, the Ministry of the Aviation Industry was given the first version of tactical and technical requirements by the Ministry of Civil Aviation. They provided for development of a supersonic passenger aircraft based on the M-50 missile carrier designed by Myasishchev. For this reason, many of my colleagues in the Air Forces' long-range aviation were greatly perplexed when a government decree which came out in 1963 charged the design bureau of A. N. Tupolev with development of the supersonic aircraft.

The first flight of the Tu-144 prototype took place on 31 December 1968 at the airport in the city of Zhukovskiy. I recall the excitement of that memorable day. In the final hours of 1968, the weather was not present—a solid low overcast. They had to send up aircraft especially to disperse the clouds over the airport with chemicals. The first proving flights brought not only elation. The need for important design changes was revealed. The aircraft consumed excessive fuel. Such an aircraft did not promise commercial profits for Aeroflot.

I had occasion to become involved with Tu-144 matters practically from the first days of my transfer from the Air Forces to civil aviation. I began work on 25 May 1973, and on 3 June the ill-fated Tu-144 crashed during a demonstration flight at Le Bourget.

Our ministry leaders, who were downright alarmed, appealed to D. F. Ustinov, secretary of the CPSU Central Committee, at the end of 1974. Ustinov regarded our apprehensions seriously. This is attested by the document, which I quote word for word:

"V. Important.

"Comrade Dementyev P. V. (the minister of the aviation industry—editorial staff)

"Comrade Smirnov L. V.

"Please turn your attention to the completely unsatisfactory situation related to the construction, testing and development of the Tu-144 aircraft and to the questions raised in this connection by the collegium of the Ministry of Civil Aviation. Work out and confirm the necessary measures in the collegium to rectify the state of affairs and report to the CPSU Central Committee.

"D. Ustinov, 23 December 1974."

P. V. Dementyev reported on the steps taken soon afterward: "A new manager and chief designer of the Voronezh Aircraft Plant have been appointed in order to reinforce supervision of work on the Tu-144 aircraft."

They also informed Ustinov that the Tu-144 would begin flying on Aeroflot routes in the fourth quarter of 1975 with the delivery of four aircraft. They promised delivery of another four aircraft in the following year.

It cannot be denied that we were sorry for the manager of the Voronezh Aircraft Plant, Boris Dmitriyevich Danilov, a mature and principled executive. In my view, he was unjustly sacrificed to conceal the bad state of affairs surrounding the aircraft's development.

The bad luck with the supersonic aircraft impeded the production of other aircraft much needed by the country, the Il-86's.

True, the Tu-144 did not turn out well. What was the basis for the negative "verdict?" V. M. Myasishchev, and following him the aviation specialists in France and Britain, defined the fundamental basis of the future aircraft: the best possible capacity, dimensions, and power-to-weight ratio per passenger. The Tu-144 was not part of this fundamental scheme, and it was impossible to correct the miscalculations in its construction by any engineering or administrative "refinement."

The only correct decision to discontinue all work on the Tu-144 had to be taken—in principle. We reported this firm opinion of ours to the highest authorities. Unfortunately, they did not want to acknowledge reality in the Ministry of the Aviation Industry. The many "improvements" on the aircraft were continued. They were equally unsound and could not produce the desired results. Supporters of "improvement" engaged in the organization of individual flights, or rather publicity flights, of an empty aircraft to Khabarovsk—with additional fuel on board.

The discussion with the minister of the aviation industry, Dementyev, was memorable. Outwardly it proceeded calmly for more than an hour and a half. Petr Vasilyevich asked that our joint report to the CPSU Central Committee be read aloud. I was not successful in persuading the minister to accept our version of the decision.

Concluding the discussion, Petr Vasilyevich said: "Yes, we will spend 1.6 million more, but we will build the aircraft." I objected: "Petr Vasilyevich, we will waste time and spend 600 million, but we will not have a good airplane."

At the time of one of the reports to the minister related to the Tu-144, B. P. Bugayev passed on a serious reprimand from D. F. Ustinov. Essentially the reprimand, according to the minister, was that in reaching a decision to discontinue all work on the aircraft as a whole and in criticizing the designers and top managers, we, Aeroflot, are thereby discrediting L. I. Brezhnev. The underlying reason for this warning, I think, was this: when Ustinov was the deputy chairman of the Council of Ministers, he was concerned with aviation and empowered to resolve key problems in developing the supersonic aircraft. Apparently Dmitriy Fedorovich took our uncompromising actions as a snide remark about him.

In the summer of 1977, a directive came "from the top": begin passenger flights with the Tu-144 in the fall. Thanks to the high sense of responsibility, sound knowledge and considerable experience of all the specialists involved with the flights and technical operation of the aircraft, the work was completed faultlessly. The possible malfunctions of equipment in flight were brought to light in good time and preventive measures were eliminated practically completely.

Soon afterward, the chief of the Operation and Repair of Aviation Technical Equipment Main Administration, V. P. Stepanenko, presented me with a joint plan with industry for organizing passenger flights for my examination and signature. All the managers from the Ministry of Civil Aviation had signed. It remained only for me to countersign the document and for Bugayev to approve it. I would not sign the document and demanded that it be redone, and this is why. According to the document, Aeroflot would obtain these aircraft from the Ministry of the Aviation Industry. But they had not undergone state tests! They simply had not passed them. The acceptance and payment for these airplanes would have meant unprecedented fraud against the state of the most flagrant type. A fraud agreed upon by both sides and with the consent of high officials.

I "mollified" my rejection with a proposal: let us begin flights on time in aircraft of the Ministry of the Aviation Industry, but in Aeroflot's name. This was the only possible compromise. The question appeared to have been settled, but my obstinacy had created obvious displeasure "at the top." They had met their match this time.

I decided to forestall further actions by those who advocated illegal acceptance of the aircraft. I telephoned B. P. Bugayev, reported, and received the cold response that the matter relates to my official duties and that I can decide as I think necessary.

With the forced termination of short passenger flights, to my great regret, the fuss surrounding the Tu-144 did not end, but continued, probably until those same 600 million rubles were senselessly wasted...

The Tu-144 episode was the bitterest page in my career as an aeronautical engineer.

In conclusion I would like to express a few thoughts.

In our boundless great country, economical supersonic (hypersonic) passenger aircraft are very necessary for the resolution of important state and social problems. The expenditures for such aircraft will be repaid with interest: by saving people's time and by the sense of closeness to the center. This project can be put into practice in a relatively short period of time.

In my view, we need not remain silent about the deep-seated reasons for the failure of the Tu-144. They should be studied thoroughly and competently, and lessons should be learned from them. The billions spent on this

unsuccessful project should not be wasted at all, for a negative result is also valuable in its own way. The taboos and innuendoes should be removed.

The honor of our aviation uniform will not suffer if we look directly at Aeroflot's technical and economic level and set high standards. A quarter of a century ago we led the world in civil aviation. Alas, we have not made use of the lift of the scientific and technical revolution and we have lost the altitude we had gained. Let us look directly at the truth: today we are continuing to make passenger and cargo flights in the country and abroad on a colossal scale in what are basically obsolete and uneconomical aircraft. Excessive fuel consumption amounts to millions of tons annually. In order to correct the problems in civil aviation, drastic measures which deal with the entire aviation-production complex are required. And monopolism and bureaucratism must be overcome first of all. They played a foul role by not making it possible to realize our potential in developing the Tu-144. I will not stop believing that Soviet supersonic passenger aircraft of a new generation will climb into the sky.

MOTOR VEHICLES, HIGHWAYS

MVD Official Comments on Road Accident Statistics

18290237 Moscow SELSKAYA ZHIZN in Russian
21 Jul 89 p 4

[Article: "Accidents on the Roads"]

[Text] The GAI MCD SSSR [State Motor Vehicle Inspectorate, USSR Ministry of Internal Affairs] has released data on motor vehicle accidents during the first half of 1989. Accident rates increased substantially compared to a similar period last year: the number of road accidents by 18.4 percent (124,622), fatalities by 26.7 percent (21,469) and injuries by 17.9 percent (134,572).

A large proportion of the road accidents involved private vehicle owners (65,162). There was a considerable increase in the accident rate for drunk drivers—28.2 percent. Drunkenness behind the wheel was an even more frequent cause of death (increased by 37.7 percent).

TASS correspondent V. Zadera asked V. Zhuravlev, main administration chief at GAI, to comment upon these figures:

In general, the increase in the accident rate can be explained by a weakening of discipline, an incorrect interpretation of democracy as some sort of general permissiveness, making it possible to use the pretext of shortcomings in normative acts to neglect their observation. As a "model" of society, road traffic vividly shows that in any area it is necessary to unconditionally respect the law, independently of one's personal attitude towards it.

Among the reasons for the accident rate are the violation of speed limits and the failure to use safety belts. There

is now a discussion about limiting the number of individuals who have the right not to use them. Accidents frequently occur in passing situations, where drivers not only refuse to help another driver in difficulty, but consciously try to make the situation more difficult.

Unfortunately, this is evidence of extremely low driver standards and etiquette. Experienced motor vehicle officers know that the condition of vehicles and their external appearance—reflective or darkened glass, stickers, etcetera—are reliable guides to assuming their inclination to violate the law and through egotistical actions to create nervous and tense situations on the roads.

The unsatisfactory organization of first aid by health organizations and the inability of people involved in an accident to render medical assistance also contribute to the seriousness of road accidents.

There can be no toleration of the increase in accidents caused by drunk drivers, especially those on the job. It is they who have caused the greatest increase in the number of deaths caused by drunkenness. This is in spite of their working under the supervision of management and controllers. They drive heavy trucks, endangering many people's lives.

It is of primary importance to educate children to respect traffic rules, as there has been a considerable increase in the number of children who are casualties in traffic accidents: In a half year 2,377 children perished (a 17.6 percent increase) and 20,672 were injured. Experience shows that the summer vacation period brings a deadly increase in the number of injuries. Consequently, all children's institutions and pioneer camps should introduce a system for educating children in traffic rules—just as pedestrians and drivers of bicycles, motorcycles and other motor vehicles.

Fate of New 'Orbit' Car Pondered

18290225 Moscow SOVETSKAYA ROSSIYA in Russian 13 Jul 89 Second Edition p 2

[Article by Yu. Shatalov: "'Orbit' Is Fenced In"]

[Text] The new model of the "Orbit" IZh-2126 automobile underwent testing 5 years ago at the Izhmash Production Association's Izhevsk Motor Vehicle Plant. At that time an authoritative commission recommended it for series production. Since then the "Orbita" has been making its way towards the customer. Now, when the light has appeared at the end of the tunnel, it turns out that the compact car is not ready for mass production.

Is 5 years not really enough?

With such questions I turned to O. Sobin, general director of the Izhmash Production Association.

"We are not holding up matters", says Oleg Ignatevich. "As planned, we can deliver the first 5,000 vehicles in

1990. But there are still many questions concerning the enterprises with which we must deal..."

The motor vehicle builders' optimism is supported by calculations and specific deeds. Reconstruction is in full swing at the enterprise. New shops to produce car bodies and rear axles are being rapidly fitted out with domestic and imported equipment. Almost all manufacturing processes have been worked out and fittings are being manufactured.

Specialists think that after the Izhevsk Plant is rebuilt it can stand in the same ranks as similar enterprises at which reequipment began considerably earlier. Production standards will be set by flexible manufacturing systems, robots, automatic lines, modern quality control devices and small scale mechanization.

However, the plant has an "Achilles heel" which makes it not only easily injured, but also defenseless. This is its extensive cooperation with other enterprises. The plant's dependence upon partners can be judged simply by the fact that it has more than 100 suppliers for its basic components and materials. Altogether, there are more than 1,000.

How flexible and reliable the mechanisms of interaction have to be so that not a single supplier disrupts the motor vehicle plant!

However, the suppliers are not so distinguished.

"In recent months we, the main specialists, have seldom been at home," G. Biganishvili, the commercial director at the Izhevsk Plant, shares his feelings. "We are visiting the offices of various ministries and agencies, besieging the waiting rooms of managers at enterprises with which we deal. We are attempting to clarify who will supply us, when they will do it and how much of the needed parts and materials they will deliver. Frankly, I have to say the picture is depressing."

There is really no cause for joy. In just nine main supplying enterprises, by 1990 it will be necessary to put 808,000 square meters of plant area into operation. However, many have not even begun construction.

What is there to build? The administrations of the Production Association Tochmash [Precision Machinery] in Vladimir and the Production Association imeni V. I. Chapayev in Cheboksary do not yet even have any building plans.

The Production Association Machinery Building Plant imeni October Revolution is putting the Izhev car builders in a difficult situation. Recently the Permians "cheered up" their partners by admitting that the new building for producing parts will not be built by 1990. It is not clear whether the Izhevsk Plastics Plant will be able to supply them. The new automobile will have 65 kilograms of plastic parts, more than twice as much as the old one.

One gets the impression that news about the beginning of this car's mass production in 1990 hit supplier enterprises and ministries like a bolt from the blue.

Is this true?

In January 1986 the USSR Council of Ministers entrusted a group of ministries to create, during the 12th Five-Year Plan, capacity at their enterprises to produce the IZh-2126 automobile and parts and components for it. It was clearly stated that the first 5,000 compact cars should roll off the assembly line in 1990. In June of that same year USSR Gosplan obligated the appropriate ministries to develop, manufacture and deliver the necessary equipment and fittings.

Then the first alarming symptom appeared: The ministries of the machine tool and tool building, electrical engineering and the former motor vehicle industries refused to develop, produce and deliver automatic lines and other complicated equipment during the 12th Five-Year Plan. The Izhmash Association management and the Udmurt Obkom had to exert considerable efforts to break the ice, but time was lost.

There is no need to say that it is very valuable now, 6 months prior to the series production of the "Orbita." Early this June a document signed by Deputy Chairman of the USSR Council of Ministers I. Belousov arrived from the ministry. In particular, it stated that: "In spite of the USSR Council of Ministers instruction on 4 May 1989, the USSR Ministry of the Petroleum Refining and Petrochemical Industry has not agreed to deliver rubber parts to outfit the new series IZh-2126 for 1991 and subsequent years..."

If the Ministry of the Petroleum Refining and Petrochemical Industry [Minneftekhimprom] "heard" the country's government, then the protocol for the parts supply agreement, signed by managers of both ministries, made no impression at all at the Borskoye Glass Plant Administration.

G. Biganishvili explains: "We come to the plant to ask for glass for the new car, but they do not want to hear us. We show them a copy of the protocol, signed by, among others, Ye. Filippov, deputy minister of the Construction Materials Industry. They smile: 'Are you not acquainted with the Law on State Enterprises?'"

The Izhmash "messengers" can talk for hours about such curious cases. The conclusion is simple: Some ministries and their subordinate enterprises have a view that government instructions do not apply to them. Why then, did the USSR Council of Ministers, starting in 1982, pass three decrees concerning the IZh-2126? And how many meetings and conferences have various ministries and agencies had on this subject? People in the know assert that there were at least a hundred. Mountains of paper have been written and tens of thousands of rubles spent on official travel. What is the result? They cannot even build a tiny number of new cars within the planned deadline without nerve wracking work.

Why have managers been dissatisfied with the "Orbita"? Do they really not understand that our shortage-ridden economy needs it like air?

"The problem, of course, does not lie with the new car," says P. Grishchenko, USSR People's Deputy and first secretary of the Udmurt Obkom. "Why do you think that it is taking so long to get to the customer? It is because of poor state discipline. This intensifies departmental fragmentation and sectoral egoism. It should not be forgotten that related ministries and enterprises had no economic interest in beginning the car's production before 1990."

This is undoubtedly true, Petr Semenovich. The roots of the problem are in our sad insensitivity towards innovations, towards the people's needs and in our command-compulsion methods of management. We still have no other choice but to convince ourselves with each step.

Of course, the car builders are offended that the glass makers were cool towards them, to put it mildly. However, one can and must understand the latter. They have their state orders. Then here come unexpected guests with important documents. If the USSR Ministry of the Construction Materials Industry risked connecting the Izhmash Association to the glass plant, then it should have interested the collective in producing the parts for the new car by creating the minimal conditions for this. However, instead of economic tools, once again administrative sticks were used.

In swinging them, it was forgotten that there is a Law on State Enterprises, before which everyone is equal. For example, USSR Gosplan gives the Ministry of the Chemical and Petrochemical Industry a target to supply the new production operation with small rubber items. There are instructions, but no economic justification. Therefore Minneftekhimprom "does not agree to deliver in 1991 and subsequent years!" From what sources then, from what and from whom? The directive documents give no answers to such questions. Perhaps therefore, as noted at the 4 May 1989 USSR Council of Ministers meeting, "several questions on supplies for producing the IZh-2126 Automobile with parts and materials still remain unsolved."

True, in recent times live saplings have appeared in the fence of command and administrative measures: The Presidium of the USSR Council of Ministers approved a decision to sell all 5,000 new cars produced by the Izhevsk Motor Vehicle plant in 1990 to workers, engineering-technical staff and employees of enterprises and organizations participating in producing it and supplying it parts.

If this was not a blow to departmental egoism it was at least a slap. However, a slapped monster will not fall down. If other measures are not taken it will continue to hold the "'Orbita' and its builders hostage and doom the the consumer market and consumers themselves to starvation rations. It might seem that a mountain has been born, but it is only a mouse. Today it is only with great

exaggeration that one can call the IZh-2126 a new model. Five years have passed since the day of its test drive. There was also a development period. Much water will flow under the bridge before the car builders get its production up to the planned figure—180,000 per year.

Just what can be done?

There is a solution. It is to examine the question about using the motor vehicle production operation as a base for the creation of a socialist concern or an intersectoral association. Possibly, there are other combinations of independent enterprises interested in producing the automobile that would be successful not only in our shortage-plagued economy but also abroad.

Is this idea as utopian as it may appear at first glance?

It is no more fantastic than perestroika in the economic mechanism. Moreover, intersectoral associations are already a reality in our country.

The matter lies with innovative and entrepreneurial economic managers who would put this load on their shoulders.

RAIL SYSTEMS

658.012.011.56:656.2

Automated Rail Control Centers Detailed

18290276 Moscow ZHELEZNODOROZHNY
TRANSPORT in Russian No 8, Aug 89 pp 16-21

[Article by Professor L.P. Tulupov, doctor of technical sciences: "Automated Rail Transport Control Systems: Unity of Economic Management"]

[Text] *In accordance with a recent decision by the Ministry of Railways, it is planned to create a network of automated transport control centers. Each will exercise operational management of train work on a specific technological route (in a region). This means a transition from carrying out local tasks, performed by automated systems at stations and in administrations of the railroads, to comprehensive automation of operational management of transport on a sector scale. But the widespread introduction of computers in the sphere of production activities of transportation requires considerable capital investments, and these resources must be used wisely, not permitting unproductive operations. In this article, Professor L.P. Tulupov raises a number of topical questions of automation of management and offers proposals aimed at ensuring the most effective accomplishment of the planned measures to centralize operational management of the transport process using computer technology.*

Railroad transport is now using experimental automated dispatching control centers (ADTsU) in experimental operation in the Ministry of Railways and on the Donetsk, Belorussian, North Caucasus, South Urals,

Northern, and Central Asian railroads. They differ significantly in technical equipment and informational support, work technology, and, in frankly, the "ideology" itself of the structure. The directives adopted by the ministry define the geography of locating the centers and the network technological routes (regions). This enables specialists, knowing the objects of control, to seriously think through rational decisions for each center. At the same time, it is not clear from this document just what they will create on the railroads: automated transport process control centers, automated dispatching centers, transport process control centers, dispatching control centers, or automated dispatching control centers (ADTsU)? This involves the Railway Traffic Main Administration of the Ministry of Railways and the Network Automated Control Center (ADTsU of the Ministry of Railways), but it is not clear whether these are one and the same bodies or not. The also use the following concepts interchangeably: road, polygon, region, route.

Unfortunately, the transport process concept is also causing confusion. You see, it includes, as a minimum, train and freight work. However, the directives pose the question of reorganizing the structure of operational management of shipments with concentration of control of train work in one center, according to the experience of the Donetsk, Belorussian, and a number of other railroads, and also in the Main Traffic Center of the Ministry of Railways. But what about control (including operational) of freight work and car, track, and other facilities? Are other control center networks to be built right behind this?

The established time frames for creating center networks should be based on standard projects and control technologies. Of course, with such a capital-intensive and all-embracing decision, many questions should be clear: First of all, what kind of organizational structure is planned for the future and for the transitional period? Is an ADTsU network being created in addition to the administrations, the information-computer centers, and the railroad divisions? Is it advisable to build individual new buildings just for the ADTsU, leaving everything basically as before in the buildings, the administrations, information-computer centers, and railroad divisions? Finally, where to locate the junction automated control centers—at the decisive shunting stations or, as much as possible, use for this purpose the buildings of road divisions and so forth. I could go on with the list of questions without answers to which the likelihood of the next "blunder" in organizing the use of computers and other modern office machinery is great. You see, we are not so rich that we can routinely give all 46 ADTsU's the opportunity to "flourish," as each sees fit. This is a critical moment, and the questions are critical. Based on a study of domestic and foreign experience and as a result of scientific research work performed on the prospects of automated rail transport control systems, I would like to give my answers and suggestions on this problem.

Improving Organizational Structure. It is no secret that with more automation of the processes it is possible to control larger facilities, sectors, subdivisions, and associations, and to strengthen control functions. It is known that splitting up the roads, divisions, and control functions during the period of stagnation led to large national economic losses and, in particular, to a decrease in productivity of locomotives and cars, an increase in management staff, and so forth. We are firmly convinced that both then and today it would be advisable to have no more than 26 railroads and 136 divisions in the network (instead of the railroad divisions being abolished, the dispatching subdivisions could be temporarily retained). We also have not exhausted the possibilities of further combining main administrations, administrations, and departments accordingly. All numerical excesses were and are harmful: excess technological and bureaucratic junctions are emerging; capital investments in the sphere of control are increasing, including in automated rail transport control systems, and so forth.

We need to look for a new style of economic management and eliminate our lag behind industry and agriculture, where they are searching for and trying much more extensively and radically various systems of economic management. Now, the administrative-command style is characteristic for the upper levels of management in rail transport. On the lower "junction" (manager—worker), everything is changing. Here, in most cases, they do not even try to talk to and order about workers, as, by way of illustration, a higher supervisor permits himself to do with a supervisor of even a related (lower) level.

The worker, and not the manager or engineer, is now feeling his shortage. If there is a direct economic concern, the commands "pass," but if the work or assignments are unfavorable because of the pay or situation, the lower-level manager has to persuade the worker. In other words, the "lower" manager often has no flexible rights and economic levers to be an economically supported leader in all cases. As a result, much time and nerves are spent, but there is virtually no change in the intensity and improvement in the work technology of the direct performers.

You see, the main thing is to organize and show in the work place how to get people interested in increasing labor productivity and improving the quality of work. By distracting the leader of a junior element and not giving him independence and economic rights—levers for objective management of continuous organization of labor by the workers in a specific situation, we are losing a whole lot. The thing is, "frenetic" activities of managers at the second, third, and fourth levels, unfortunately, do little to change the situation at the work positions of those who do the work.

Every railroad enterprise and association should be interested in the "pursuit" of state orders and work on contracts with clientele. Every upper level of management in this case will be a "pursuer" but a needed assistant in improving economic activities of the objects

of management. For example, private railroads in the U.S., with the presence of the Federal Department of Transportation, contain their own upper level of management "in joint-stock," so to speak—the Association of American Railroads. Actually, this is a automated control center where various financial calculations for direct shipments and services are performed efficiently on computers. All shipments, cars, containers, and trailers are also tracked electronically. Authorized representatives of each railroad work there on a permanent basis for efficient resolution of "junction" questions of the transport process. The small Department of Transportation as a whole is on the federal budget and is not involved in operational control of operational work. Thus, the owners of the railroads maintain the sector automated control center at their own expense with the staff and functions that they need. Partners on three levels will be mutually necessary under economic management in our conditions: the Ministry of Railways—the association—the enterprise.

In light of what has been said, one cannot agree with the proposals on the immediate elimination of the divisions. In our view, a considerable amount of time will be required for changes in the economic and legal spheres, as a result of which the subdivisions will become economically independent enterprises, and the railroads or enlarged divisions will become associations. Managers should be altogether different in these future associations and enterprises—by rights, responsibility, and being equipped with automated work positions. As legal, economic, social, and technical conditions are created, the transition to three-level management will be accomplished by phases and objectively. Volitional decisions and haste in these questions are impermissible.

Domestic and foreign experience shows that responsibility distinctly distributed by levels of management and controlled by the system increases the requirements and quality of work of managers. The tendency is such that the management staff is reduced and qualitatively reformed. The manager will not have bulky archives and a desk heaped with papers. In a number of instances, an entire department can be replaced by one person, competent, erudite and given rights, at his automated work position (ARM). The computer will assume much of the work. The productivity of management labor will increase sharply.

The new organization of labor and scientific and technical progress are imposing new demands not only on the management staff. There is a clear trend of radical changes in the established notions of professions and specialties in the sphere of production, too. Specialization of machines, mechanisms, work positions is growing at a rapid pace, simultaneously with the generalization of workers and employees. This involves not simply holding two jobs, but also a **radical review of the very concepts of specialty, profession, and position.** Employment at the work position will be decisive. For example, under the existing division, there are now three types of work for three specialties, but the total duration of this

work is less than 8 hours. In this case, one person instead of three is trained for this work position and for the work typical of this position; he learns to the extent necessary that which is required of each specialty. And the training is done at that work position. Of course, such general-purpose specialists should receive more pay. In the end, the state is the winner. This idea has been partially implemented on the Belorussian Railroad: they combined the work of the PTO [technical service point] inspector and train inspector; the assistant engineer replaced the conductor of a mixed train. Back several years ago this was unlikely; the services were different.

Hence the question arises: Are our services broken down too much? On a number of foreign railroads they number from 4 to 16, but we have 20. The increased flow of paperwork and the loss of comprehensiveness—all this is the result of splitting up the roads, divisions, and services with which our transport was saturated in the 1970's. This fragmentation will continue to interfere with generalizing workers and employees, and consequently, impede growth in labor productivity. These are the associated causes making it difficult to create an effective automated rail transport control system.

As far as the technical services are concerned, the transition to a three-level management can begin sooner by enlarging the distances to the boundaries of the divisions and combining repair and servicing of the rolling stock at a smaller number of more equipped enterprises. Thus, the scheme of "administration—service—interval, construction organization, repair and maintenance association" can be introduced without waiting for changes in the control system of train and freight work.

Preliminary calculations show that even with a more efficient organizational structure, the cost of creating the automated rail transport control system of the second section will be a rather sizable sum. If the existing structure is left, the expenditures will be approximately 30 percent more, but the effectiveness of the system will be 5-10 percent less due to the excess junctions, the variance of the boundaries of railroads and technological directions, the excessive fragmentation of functions, and so forth. You see, the imperfect organizational structure directly affects the worsening of qualitative indicators of operational work.

Centers of Automated Control, Not Automated Dispatching Control Centers. In all cases, it is more correct to call the centers being created centers of automated control, not automated (man-machine) centers of control. This is regardless of whether it is dispatching control, control of the transport process, or control of the sector as a whole. But the name is not the main thing; it is important to define the essence of what is being created.

In my opinion, immediate creation of a network of 26 road automated control centers that would perform the functions of the existing administrations of the roads, road information-computer centers, central divisions,

and, of course, automated dispatching control centers would be the most worthwhile and effective. Not only would the dispatching staff work at the automated control dispatching center, which at times is what is meant by the automated dispatching control center or integrated control center (on the Donetsk Railroad), but also the management staff. The work position of not only the dispatcher but also of each manager, including the chief of the railroad, should be automated. The conditions of an automated control center of an average railroad would require 250-300 automated work positions (including dispatcher positions). Since forming a network of automated control dispatching centers by remodeling buildings of the administration and the information-computer center of the roads, and in individual cases building new buildings, is a capital-intensive matter, they must be created only in cities in which the railroad centers will be sure to remain.

As far as branches of the railroad automated control centers are concerned, and this involves 20-25 branches, they will be involved primarily with organizing operational work, that is, the automated dispatching control center in them will become the main component. In addition to the dispatcher-automated work positions, the average branch automated control dispatching center will require about 100 automated work positions for the rest of the administration workers. It is logical that the branch automated control dispatching centers grow by phases from the peripheral enlarged railroad divisions. Thus, in the future the largest railroads (from the recommended 26) will have branches of railroad automated control centers. And the total figure determined by the ministry, in our opinion, is close to the optimum. But in a qualitative sense, this should be 26 automated control dispatching centers, each of which includes functions of the railroad administration, central divisions, and the railroad's information-computer center, as well as the automated dispatching control centers of the route (region). The remaining 20 are branches of the automated control dispatching center. Each branch will carry out the functions of peripheral divisions of the railroad and the automated dispatching control center of the route (region).

Put simply, if a railroad releases buildings that are unsuitable for the automated control dispatching center (buildings of the administration, information-computer center, and central divisions of the railroad) for housing, cultural and communal facilities, or the production sphere, and instead builds a specialized building for the automated control dispatching center with modern automated work positions for each manager (including the dispatchers) and computer rooms and a communications center, this will be economically efficient. Owners of private railroads in the U.S. long ago created an automated control center network in modernized or new buildings in place of the information-computer center network. Let us remember that they pay for the control system for their railroads literally out of their own pockets. In our conditions, in most cases, they are

striving to "make" another administrative "palace" to the existing administrative buildings of management organizations, and only for automated dispatching control of train operations.

Another thing is known: If a manager is given rights, an automated work position, and a direct economic interest in the end product, he can replace 2-5 people employed in the existing systems with a better quality of management. You see, right away 70-90 percent of the paperwork and the majority of "mandatory coordination," meetings, and selector switches are eliminated.

Technical Support. The transition from a network of computer centers to a network of automated control centers is fundamentally new for the second phase of the automated rail transport control system. Computer equipment (specialized and collective-use) and communications devices are located in the automated control center. The railroad automated control centers, for example, should have at least three computer complexes supporting operational control, planning and engineering tasks, and statistics and archives, respectively. Data transmission multiplexers will be replaced by auxiliary "communications" computers, supporting teleprocessing and message switching.

Besides them, the automated control centers will use specialized micro- and mini-computers for the managers' automated work positions to communicate with the computer network. The dispatchers' ARMs must also be linked to the dispatching centralization devices, monitoring devices, and so forth.

Specialized computers will be installed at regional automated control centers to perform operational tasks associated with passenger traffic and also tasks of the "Ekspress" system. Wide-band and telephone communications channels, including satellite communications channels, should be allocated between the automated control centers of the Ministry of Railways and the railroads.

At junction automated control centers, in addition to specialized computers, there will also be collective-use general-purpose computers for servicing the enterprises of the gravitating region not having general-purpose computers of the necessary parameters. These automated control centers will simultaneously fulfill the role of collective-use junction computer centers. Computers will be installed at junction automated control centers for message switching. Using assigned telephone channels, communications should be ensured with points of information concentration and information points of line subdivisions. Telegraph channels can also be used for communicating with information points. Thus, in the ideal, any automated control center (in a modernized or newly constructed building) should include communications center rooms and equipment, an information-computer center, an automated dispatching control center, and work rooms with ARMs for all the rest of the management workers.

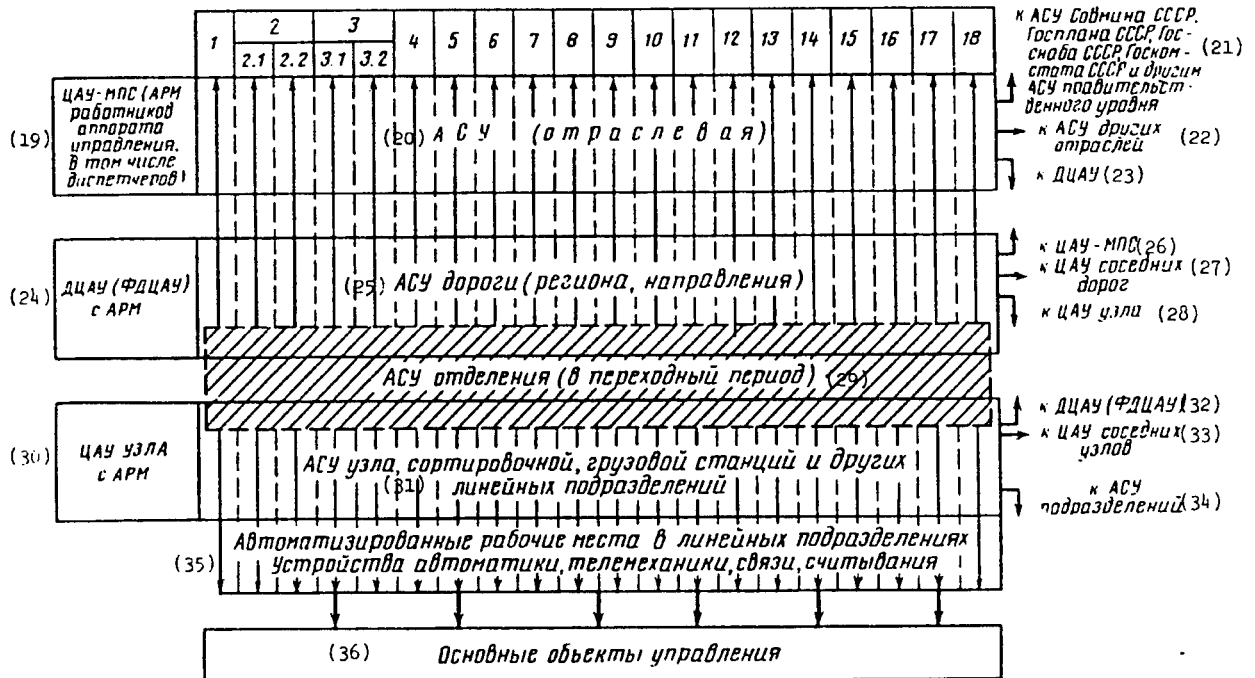
"Computer-to-computer" communications should be between the Ministry of Railways automated control center and railroad automated control centers, between automated control centers of neighboring railroads, and also between railroad automated control centers, branch dispatching automated control centers, and junction automated control centers of their own railroad. The same communications should be between the Ministry of Railways automated control center and computer centers of the USSR Council of Ministers, the USSR State Committee for Statistics [Goskomstat], the USSR Gosplan, and other government-level computer centers, and also with sector automated control centers. In turn, railroad and junction automated control centers should have "computer-to-computer" communications with republic and oblast computer centers and automated control centers of the most important enterprises and associations of other sectors of the national economy.

On the lower level, an ever-increasing amount of information will be input into the computer network of the automated rail transport control system from automatic transmitters, automation devices, and remote control devices. However, a considerable portion of the properties of computer-oriented reports still will require manual preparation and transmission. Specialized and terminal devices, including ARMs based on microcomputers, will be widely used to transform and transmit the information from the lower level to the computer network.

All sectors must be equipped at least with dispatching monitoring devices or equipment determining the position of the train, including indicating its number (index). All track circuits, axle counters, PONAB's [Punkt Obnaruzheniya Nagreva Buki—Axle Overheating Detection Point], and also new devices that signal the location, status, and purpose of some or other object of control simultaneously become transmitters of input information to the automated rail transport control system or actuating devices. The shift to microcomputers of automatic and automated process control systems should be accomplished at a more intensive pace.

The transition of the entire sector to modern automated control based on a three-level automated control center network (see figure) will also made changes to the organizational and functional diagram of development of the automated rail transport control system. In our opinion, the predominant importance of functional subsystems taking into account the specific features of rail transport and centralized process control will be preserved. But the meaty portion of the subsystems will change: optimized tasks; interactive mode at automated work positions; paperless technology; and so forth.

It is apparent from the figure that railroad divisions are retained during the transitional period (the automated control systems of a railroad division are shown by the broken line). These automated control systems are supported and serviced by computers of the railroad and junction automated control centers. It is a different



Functional subsystems of the second phase of the automated rail transport control system:

Key:

1. Plan calculations
2. Management of the transport process, including:
 - 2.1—technical and production rate setting;
 - 2.2—operational control of shipments, etc.
3. Management of commercial work and loading-unloading operations
 - (3.1), container shipments
 - (3.2), etc.
4. Management of passenger traffic
5. Management of locomotives
6. Management of maintenance and repair of cars
7. Management of electrical supply devices
8. Management of maintenance and repair of track, structures, and devices
9. Management of capital construction
10. Automated compilation of railroad statistics
11. Management of material and technical support
12. Management of financial activities
13. Automated accounting and reporting
14. Management of personnel
15. Automated recording, storage, and use of scientific and technical information, including in scientific research and experimental design work
16. Management of railroad industry
17. Management of subways
18. Management of industrial transport

19. Ministry of Railways automated control center (ARMs of management workers, including dispatchers)
20. Automated control system (sectorial)
21. To automated control system of USSR Council of Ministers, USSR Gosplan, USSR Gosstata, USSR Goskomsat, and other government-level automated control systems
22. To automated control systems of other sectors
23. To automated control dispatching center
24. Automated control dispatching center (branch automated control dispatching center) with ARMs
25. Automated control center of railroad (region, route)
26. To Ministry of Railways automated control center
27. To automated control centers of neighboring railroads
28. To junction automated control center
29. Division automated control system (during transitional period)
30. Junction automated control center with ARMs
31. Automated control system of junction, sorting yard, loading stations, and other line subdivisions
32. To automated control dispatching center (branch automated control dispatching center)
33. To automated control centers of neighboring junctions
34. To automated control systems of subdivisions
35. Automated work positions in line subdivisions; Automation, remote control, communications, and counting devices
36. Main objects of control

matter when the railroad division building is located in the immediate proximity to the sorting yard and can be used for the junction automated control center or regional ("section") branch dispatching automated control center. In the rest of the cases, it is not feasible to create a computer center in the division building or to create one specially for it.

Information Support. An analysis performed at the Moscow Institute of Railroad Transportation Engineers of the possibilities and requirements of "machine" determination of optimization tasks and selection of regulating measures during difficulties in the transport process also confirmed the need for radical restructuring of the existing information support based on implementing modern principles and the technology that has appeared in our rail transport. It is necessary to switch to a new complex of computer-oriented message documents for introducing into automated computer centers optimization and information tasks; increasing the efficiency of management information; recording the operations, work, and status of facilities; modeling the development of processes; and providing detailed information to executives at various management levels on the current and planned operations.

Substantial portions of 50 record-keeping documents have already been drawn up. All messages are built on a single structure and contain information about the highest-volume production operations completed, events, and changes in the status of control facilities.

The properties composition of the primary message documents ensure minimum repetition of information being transmitted to a computer network: information is passed on a one-time basis reflecting events, an operation, and the status of a control facility in one of the messages. The system determines part of the properties automatically without human intervention. For example, this includes the date and time of message transmission (based on logical analysis and monitoring of the control facility and the clock in the computer). Properties are also entered into the message which will be transmitted automatically from various transmitters and readers, and also complimented by a program.

The computer network will receive the primary message only after the properties are checked for noise-detecting codes, format, logic, and process verification, respectively. Computer processing and storage of primary data guarantee the identity of information being passed to the users. At his ARM, each management worker will receive on request or in the regulated mode, in a form convenient for him (printed, display screen, display board, etc.), only the information he needs based on the particular features of his work.

Modern computer systems ensure distribution of data to information banks according to the level of management. Lower-level computers store detailed information, since first-level managers often use it. Primary messages,

which are also important for higher levels of management, are also recorded in the computers of these levels, including at the Ministry of Railways automated control center. In the vast majority of cases, information is consolidated more and more as the level increases, that is, when transmitting from a computer of one level to the computer of a higher level.

Statistics will be compiled with the aid of a computer in parallel with processing new computer-oriented primary message documents. Computer output information, oriented on each manager, will minimize the need for him to use active operational reports. The experience accumulated shows: If a management worker receives from the computer the documents requested in form and content (including summaries), he no longer uses active operational reports, since the computer will include everything needed in the summary and prepare samples with an analysis from the various reports.

The computer system will become the sole "holder" and "supplier" of information. It will guarantee identity of information both in any summary and in the report, for example, for the USSR Goskomstat. The computer provides records for each railroad subdivision and association. When introducing new input and output messages, the list and content of active report forms change, taking into account the possibility of new information support for workers of the management staff on rail transport. But over the course of the transitional period, machine compilation of active report forms is envisioned.

The degree of detail of information is determined by the requirements of the performing control and reporting tasks using a computer, and also optimization tasks, which now is not always possible due to the lack of information, computer capacities, etc. Such things as train, car, container, dispatch, locomotive, section, locomotive brigade, station track, device for switching operations, loading and unloading area, car location of the loading and unloading area, loading request, depot, PTO [technical service point], PPV [rules for using cars in international passenger and railroad freight traffic], repair and equipment device, and so forth should be included into the new system in computer control (tracking).

Changes in the Functional Composition. A more detailed and reliable data bank created on a new set of input messages, modern technical support of the control system, and ARMs for the management workers (above all, the dispatcher staff) make it possible to switch to a qualitatively new functional composition of the automated control system, that is, to setting and performing tasks which ensure an intensive technology of the transport process. The main technical documents—train schedule and plan for marshaling trains—will be compiled using new methods of determining the estimated volumes of car traffic. In addition to planned traffic (consolidated documents over the entire period), estimated car traffic will be determined with the necessary detail (based on data about shipments completed and

also on expert estimates). This will make it possible to efficiently identify seasonal and other typical fluctuations in traffic. Plans for marshaling trains will be calculated according to all intervals of the planned period in which the capacities of the traffic change significantly. This will ensure anticipatory introduction of variants of the marshaling plan as well as train schedules.

In all schedule variants—from minimum to maximum train traffic—only the “threads” of a well-founded “nucleus” of trains remain unchanged. The rest of the trains can be divided into two categories. Additional “seasonal” trains, for example, can be included in the first category. They will be put into the second category during peak shipments. Individual trains of this category may have a single purpose during other periods, too. In general, “threads” of trains of the first and second categories are added to the “nucleus” in each schedule variant with intermediate traffic volumes. It is advisable to make up schedule variants not only for periods with considerable freight traffic volumes, but also when passenger traffic changes and repair work is carried out. The dispatching automated control centers and branch dispatching automated control centers should have graph plotters which will make it possible to provide operations workers in a timely manner the schedule variants being input. The junction centers will also have the necessary information.

Simultaneously with the train traffic schedule variant, a marshaling plan variant will be input, which corresponds most to the structure and capacities of the traffic in the upcoming period. In addition to the main purposes, each marshaling plan variant will indicate the recommended purpose (longer, group, and so forth).

Since this system provides for continuous tracking and modeling of the progress of the volumes of car traffic, the work with each train will be calculated (planned) in an operational situation for each marshaling station. In so doing, the mandatory preparation of trains for the “nucleus threads” and the maximum possible consignment of trains for the remaining “threads” of the active schedule variant must be taken into account. Each “thread” of the operational consignment plan can be occupied by a train of the main or recommended purpose of the marshaling plan.

For using the “threads” when there is a decrease in the volume of car traffic, coordinated (according to availability of replacements and the capabilities of the groups at the coupling station) group trains. When the arrival of cars longer-destination increases, the system will check the possibility of marshaling and give recommendations for marshaling a longer-destination train, etc. The operational instructions for marshaling these trains to increase the transit of traffic at stations experiencing difficulties will also be calculated and monitored by the computer so that it causes only minimal complications in operational work. Thus, in all cases, taking into account the incoming car traffic and the situation in

sections, the computer will calculate and determine the optimal patterns and sequence both of marshaling and of movement of each train. The instructions for marshaling will indicate the purpose, list of cars, composition, length, and weight of the train.

For heavily loaded, long, double, and combined trains, it is mandatory to calculate and indicate the traffic schedule for each section (including track occupancy times). For trains with less weight compared with the norms (with empty cars or cars with a light freight), less track occupancy time is regulated. The “onboard” computers of locomotives play a large role in carrying out the calculated track occupancy times.

Expert decision-making systems which operate with knowledge bases for control technology should be widely used for performing informal control tasks. These systems will serve as an intermediate link between the computer system and the management worker making the decision.

Computer 10-day planning of train and freight work is provided for in the comprehensive system. Ten-day orders are used in addition to the initial situation. Three times a month, each time for 10 days in advance (with a breakdown for each day), the volumes of train and freight work will be determined for each level and object of control with the necessary details, empty cars will be distributed, and the calculated volumes of work will be compared with track, processing, and freight-handling capacities. For each day they will determine the possible difficulties for one or another control object and work out recommendations for adjustments.

Daily, the results of the 10-day planning will be checked by control estimates for 5-7 days ahead with a breakdown for each day. The situation that has taken shape, the progress of fulfilling monthly norms and 10-day quotas, and the loading for the remaining days of the month (10-day period) are the raw data in this railroad-network task. The train and freight work will be modeled, identifying difficulties and providing recommendations (adjustment measures). In other words, taking into account deviations during each 24-hour period that has passed, the work for 5-7 days ahead will be recalculated (for monitoring): predicted volumes and difficulties, adjustment measures.

In the necessary instances, the computer at the dispatching automated control center will detail interesting indicators for the railroad with estimates for the upcoming 2-3 days. In this case, a 12-hour or 6-hour period will be used as the reference interval. This task is particularly effective when there are fluctuations in the volume of train traffic on extended locomotive servicing sections. The decision will contribute to timely dispatching of locomotives and brigades.

Computers of all levels will be used in daily shift planning. It is mandatory to calculate the optimum operating mode of the entire network at the Ministry of Railways automated control center and issue quotas to

each for fulfilling this decision. At the dispatching automated control center, in turn, they will develop quotas for routes, sections, stations, depots, etc. The plan is detailed down to each train, and at stations—down to providing each order for loading, taking into account the type and suitability of empty cars and so forth.

Routine control of train work will be accomplished with the aid of interrelated sets of tasks: "Network Dispatcher," "Route Dispatcher," "Railroad Dispatcher." Each of them will be carried out every 3 hours for 24 hours ahead, and in necessary cases can be recalculated at the direction of a management worker. Approaches of trains, train formation by routes and destinations, readiness of locomotives for hauling at each identified station—these forecasts will also be calculated by computer.

In the controlling mode, the computers will begin working out recommendations for adjustment measures. At his ARM, the manager will be able to give quotas and corrections to variants of adjustment measures in the interactive mode. The results of the calculations of these tasks will appear on the ARMs of dispatchers and senior operations workers.

Development of the Dispatching Management System. The new technical support of automated work positions for station, train, and junction dispatchers at automated control centers will make it possible to make free up time and efforts for creative organizational work. Above all, the reflection and management of the train situation should be automated, that is, making charts of traffic completed and attachments to them. An illuminated track diagram, a colored display panel, and a graph plotter can perform this task. Equipping the sections with dispatching centralization or monitoring devices, introducing an automatic read-out of information from moving rolling stock—all this is necessary work for introducing the subsystems "Railroad Dispatcher," "Station, Section, Route Automated Dispatcher" and the "Complex" system as a whole.

Continuous tracking of the movement of each train, the work of each station, and the corresponding reflection will be done by the "automated dispatching" systems. At the direction of the dispatcher, they will plot the "threads" of the plan-schedule for 3 hours ahead. In general, in each variant for the planned period, the management staff worker will give the system some or other alternative optimization criterion. The technology of the dispatchers' work in the new conditions is outlined in issues 1 and 2 of the journal for 1989.

As far as the convenient form of output, the completed graph, for example, can be read out for analysis on a graph plotter. In real time, the completed graphic during the 2-3 previous hours can be reflected on one color graphic display, and the "plotting" for the 2-3 hours ahead can be reflected on another. One cannot contrast, for example, the illuminated track diagram or the color displays. Most often they will supplement one another,

especially for the junction dispatcher. Radio communications, a tape recorder, and a dictaphone with traditional telephone communications will also be used in the dispatcher ARMs.

In the new conditions, a considerable increase in the duration of dispatcher "circles" at all automated control centers is also justified. In world practice, development of automated rail transport control systems is always accompanied by a consolidation of enterprises and a combining of functions. The management staff is reduced, hence much responsibility and independence return to the dispatcher. The dispatching system itself is retained on a new qualitative level.

The proposals examined in this article for the organizational structure, technology of control, and technical and information support of the second phase of the automated system of organizing control of trains were reported at various levels in the ministry, other bodies, and also at scientific and technical conferences. The author of these lines has even been informed that all this, they say, is in the 21st century. What can be said in response? First of all, the 21st century is no longer very far off. Secondly, creation of a network of control centers has already begun. Thirdly, in this phase it is necessary not only to reduce the lag, but also to shoot forward in comparison with automated control on a number of foreign railroads. Therefore, we cannot allow any more strategic mistakes. Above all, we need to plan and build, not information-computer centers, but automated control centers with facilities "built-in" for the computers of all managers. Of course, the automated control centers should first be equipped with dispatcher ARMs (everything, strictly speaking, that is now meant by automated dispatching control centers). From an information-computer center network to an automated control center network—this is one of the qualitatively new propositions for the second-phase automated rail transport control system. New economic and legal relations, a three-level organizational structure corresponding to them, paperless optimization control based on modern principles and technology—that is why we need to create a three-level "Sector—Association—Enterprise" automated control network.

COPYRIGHT: "Zheleznodorozhnyy transport", 1989

Railways Minister Interviewed

18290274 Moscow PRAVITELSTVENNYY VESTNIK
in Russian No 17, Aug 89 p 3

[Interview with Nikolay Semenovich Konarev, USSR Minister of Railways, by unnamed correspondent]

[Text] **Biographical Data:** Born in 1927, Russian. Graduated from Kharkov Institute of Railroad Transportation Engineering. Majored in Railway Engineering with a specialization in Railroad Utilization. Candidate of Technical Sciences. He began his career as a station engineer, worked as a deputy station chief, section chief, and in traffic service; later as first deputy, then chief of the Southern Railroad. In 1976 he became deputy minister,

then first deputy minister, and since 1982 has served as USSR railways minister. Member of the CPSU Central Committee.

[Correspondent] Nikolay Semenov! The procedure of confirmation to the post of minister was not a simple one for you. What gave you the strength to continue to struggle for the portfolio of minister after the initial review at the session of the USSR Supreme Soviet came to a negative decision?

[N.S. Konarev] In your question it would have been more correct to say not "procedure" of confirmation, but rather "process" of confirmation, which was, indeed, very complicated for me. Without any exaggeration, I may say that it riveted the attention of our public opinion. I know that quite a few appeals in support of my candidacy were sent to the USSR Supreme Soviet, the USSR Council of Ministers, and the USSR people's deputies. Particular activity was manifested by the employees of railroad transportation.

The principal motif and contents of all these appeals was a request to return again to a review of my candidacy. It is fully understandable that this fact alone has placed me under a great obligation. Furthermore, such powerful support on the part of the railroad collectives, my colleagues at the Ministry of Railways, and rank-and-file workers at the railroad transportation enterprises have given me the strength to continue working within the previous system of responsibility and obligation. Now that the USSR Supreme Soviet has confirmed me in the post of railways minister, which I regard as an exceptionally high trust by the party and the people, this responsibility for the assigned tasks has increased even more.

[Correspondent] The complaints made against the railroads by those who use their services have been growing from year to year. One gets the impression that transport is operating literally at the limit of its capabilities. Is there a precise program of organizational and technical measures to get out of this impasse, if I may so express it?

[N.S. Konarev] In the first place, I don't see any sort of impasse here. On the contrary, I see quite a few reserves which we still have to utilize. This does not mean, however, that railroad transport is operating without strain or tension. The strain of its work is known by all. Per kilometer of track we move several times more products than the Americans and all the developed countries. With regard to labor productivity we have long and solidly occupied second place in the world, while maintaining the lowest hauling costs.

In this connection, I'd like to emphasize that we don't intend to rest on our laurels. But for this the railroads need serious help and, above all, considerable strengthening of the material and technical base. Nowadays they are experiencing shortages of literally everything. They don't have enough rails, ties, new cars, or locomotives. There is a lag in automating the production processes, mechanization of labor, and in the social-everyday-service field.

That's why the time has come to adopt the state program for modernizing and renovating this country's railroads; it must absorb the very latest achievements of Soviet and worldwide experience. We have prepared the design for such a program.

With regard to your question about whether the ministry has a precise program of organizational and technical measures for a further upsurge of transportation work, I can reply unambiguously as follows: there is such a program; it is operating effectively by relying on the achievements of scientific and technical progress and advanced technology.

[Correspondent] In many people's opinion, the railroads constitute a zone of increased danger. What lessons has the leadership of the Ministry of Railways drawn from the accidents which have occurred in the field of transportation?

[N.S. Konarev] That opinion is a correct one. And this is, first of all, the viewpoint of the railroad people themselves. Taking this into account, we are structuring our work so as to ensure the safety of train traffic.

As to your question regarding what conclusions we have drawn from the instances of accidents in railroad transportation, I'd like to turn at this point to the official statistics and specific facts. In recent years the railroads have experienced several very serious wrecks with great human losses. These lessons have not gone unheeded. Conclusions were drawn, and this is attested by the following figures: if in 1987 railroad transportation experienced 163 wrecks and accidents, in 1988 this figure dropped to 128. Moreover—and this is particularly important—there was a great reduction in the number of passengers who suffered injuries. During the current year the number of wrecks and accidents has been cut by 28 percent, and not a single passenger has perished at the fault of the railroad.

Of course, this does not mean that the problem has been solved. We have many shortcomings, and we speak about them openly. We are according our principal attention to solving the problem of ensuring the safety of passenger hauls.

[Correspondent] In previous times this sector often witnessed the emergence of various initiatives. These include the Belorussian method and driving heavyweight trains. The practical experience of life has shown that not all these methods are of equal value, and not all the results were positive or favorable. What's your attitude toward these initiatives?

[N.S. Konarev] Last year the railroads implemented the most important measure of the 12th Five-Year Plan's social program—the introduction of new wage conditions, taking into account the experience of the Belorussian Railroad. This method comprised a mechanism of cost accounting with the aid of which it became possible within a short time to solve the problems which had

piled up in this sector and, above all, to accelerate the growth rate of labor productivity, as well as to increase the employees' well-being.

For the first time in the country new rates and salaries were introduced, based on the funds earned by the labor collectives themselves. During three years of the five-year plan labor productivity rose by 19.5 percent, i.e., the assigned amount regarding this indicator for the entire five-year plan was over-fulfilled by a factor of 1.5. The average monthly wage increased by 64 rubles and now amounts to 290 rubles. For the sector as a whole, 300,000 persons have been freed up, including 280,000 in the basic activity.

Personnel turnover (at present 9.7 percent) has been reduced, the losses in work time due to unauthorized absences have been cut in half, hours of overtime work have been reduced by 30 percent, and the prestige of the work by specialists and office employees has been enhanced. As you can see, the results are impressive.

Nevertheless, the application of the Belorussian experience has been subjected to criticism. Instances of wrecks, accidents, as well as certain shortcomings in operational work during recent times have been ascribed to the Belorussian method. In my opinion, its essence has been over-simplified by this criticism.

In point of fact, the rise in wages has been accomplished by means of improving technology, improving the organization of production and labor, as well as increasing discipline and responsibility. Reducing the number of employees connected with train traffic and safety (locomotive engineers, track installers, signal persons, car inspectors, and persons engaged in making up trains) has not been provided for. The statements by certain comrades to the effect that the Belorussian method was introduced in a command or order-type procedure simply do not correspond to the reality of the matter. Each enterprise, railroad section, division, and railroad as a whole worked out the organizational-technical measures for significantly speeding up the growth rate of labor productivity, and it was only at the request of the labor collectives that the ministry and the trade-union Central Committee gave permission to introduce the new rates and salaries. In short, this method was a revolutionary step along the paths of perestroyka in the work of railroad transportation.

Now I'd like to say a few words about heavyweight traffic. For railroaders increasing the weight of trains is a very important element in the intensive technology of the hauling process. Calculations have shown that increasing the average weight of a train by 100 tons allows us to throughput as many as 200 trains a day and to haul an additional 100-200 million tons of freight per year.

There must be no interruption whatsoever in improving the technology of the hauling process, and we are obligated to seek out innovations. Today we regard the

introduction of these two methods as the initial phase in ensuring a more precise and smooth rhythm for the railroads.

[Correspondent] Recently the miners' strikes were caused, to a large extent, by the fact that the leadership of that sector for a long time failed to react in the necessary manner to the problems which had accumulated, particularly the social problems. Are you, as the saying goes, keeping your hand on this pulse? Because, you know, quite a few complex problems have also piled up on this country's railroads.

[N.S. Konarev] Yes, many unresolved social problems have accumulated in our sector. The housing problem is especially acute; we do not have enough schools or pre-school institutions.

The ministry is persistently working on solving social problems, seeking out additional funds for building housing and facilities for social, cultural, and everyday services. Thanks to this, the average annual volumes of housing construction for the sector during the 12th Five-Year Plan increased in comparison with the 11th Five-Year Plan by 20 percent, and in comparison with the 10th Five-Year Plan—by 30 percent. More than 700 million rubles of capital investments were switched from production-type facilities to provide additional development for the social sphere and funds for the past period of the five-year plan.

In the social sphere, however, we have allowed quite a few mistakes and shortcomings to occur.

In order to avert the rise of conflict situations at this sector's enterprises, we intend very shortly to carry out sociological studies of the state of affairs in the localities; we have planned and conducted an extensive, forward-looking discussion of the existing problems with the enterprises' collectives. Employees in the basic occupations of transportation were recently invited to the ministry. A useful discussion took place. As a result of this, we succeeded in quickly getting our bearings and adopting a number of extremely effective, specific solutions, which had an immediate and substantially tangible effect on our sector.

As estimated by our economists, just that which we have done along these lines in the last few days required funds to be allocated amounting to a total of 292 million rubles. By means of internal reserves, we have found such a possibility; moreover, this can be done without having to borrow a single ruble.

August Rail Performance Analyzed

18290275 Moscow GUDOK in Russian 02 Sep 89 p 1

[Report based on materials from the Ministry of Railways Statistics Administration: "Results of Operation in August"]

[Text] The operational situation was complicated on the railway network in August. Strikes in individual regions of the country disrupted the smooth operation of the transportation line. In July-August, there were three interruptions of traffic, resulting in 60 pairs of trains not being transferred from the North Caucasus Railroad to the Transcaucasian Railroad and back. Passenger routes were directed in a roundabout way via the Azerbaijan Railroad, which removed an additional 190 freight routes. More than 50 trains were left without locomotives on the Baltic Railroad and on approaches to it, and more than 100 trains on the Moldavian Railroad. A natural disaster interrupted traffic on the Far Eastern Railroad.

Whereas the shipment plan was fulfilled 100 percent in 7 months, between January and August the underloading was 14.1 million tons, which exceeds the daily operation of the network. Compared with the corresponding period of last year, the volume of shipments fell by 56.5 million tons.

In August, the prescribed quantities of shipments were not met for 28 freight items, including 11 from the state order products list. The Kuybyshev Railroad was the only one to cope with the plan; it handled an additional 305,000 tons.

Since the beginning of the year, the plan has been exceeded for 8 of the 14 types of freight on the state order products list, including by 1.7 million tons for coke, 3.4 million tons for ferrous metals, 1.2 million tons for cement, 8.8 million tons for grain and grinding products, and 1.6 million tons for mixed feed. Due to the underloading in August, two more items were added to the list of four freight items which were lagging behind: 3.1 million tons of bituminous coal and 0.9 million tons of petroleum products.

Since the beginning of the year, 13 railroads have exceeded the quotas for outgoing freight. However, they all reduced the amounts of the above-plan shipments. The greatest lag was by the Kemerovo Railroad—7.8 million tons, the Tselina Railroad—5 million tons, the Donetsk Railroad—4.6 million tons, the Sverdlovsk Railroad—2.8 million tons, and the Volga Railroad—2.7 million tons.

On the rail network as a whole, the shortfall in the state order for passenger turnover was 1.3 billion passenger-kilometers or 0.4 percent due to passengers declining to take trips.

Utilization of technical transport equipment worsened. The rail car turnover slowed down compared to last year's level, and freight train weight has decreased.

Labor productivity of workers employed in shipments increased by 1.5 percent. The shipment production costs were 2.2 percent higher than the plan. The profit plan shortfall was almost 120 million rubles.

Passenger Train Delays Scored

18290230 Moscow GUDOK in Russian 19 Jul 89 p 1

[Article: "Instead of a Schedule: Passenger Train Delays Have Become a Chronic Illness on Several Rail Lines"]

[Text] As has already been reported in GUDOK the passenger schedule in June was 92.7 percent fulfilled, and for international trains 84.4 percent. This is considerably worse than the same period last year. The situation has not improved in the first half of July: 91.6 percent of all trains and 79.4 percent of international trains were on schedule.

A GUDOK correspondent asked managers of "distinguished" lines to explain the reasons for traffic disruptions and measures to normalize the situation.

So, here are the lines, their percent of schedule fulfillment for 15 days in July, the causes and measures.

Southwestern—96.5 percent, 196 trains delayed. L. Zheleznyak, first deputy superintendent of the line:

It is a difficult situation. While we were able to increase the level of schedule observation by the start of mass passenger traffic and reduce train delays by more than 800 hours, there were considerable losses in June. In July there was somewhat of an improvement in the situation, but it did not reach last year's level.

I will list the main reasons: There are 1,230 kilometers on the line undergoing major repairs. There are not enough switch ties, switches, rails, ties and fasteners. Therefore the schedule had 155 slow down orders, while today there are 186 for main passenger operations alone.

Locomotive workers had their problems. Since the start of the year they have reduced the number of passenger train delays by one-fourth, but now they are faced with the massive breakdown of the new ChS8 electric locomotives, which, incidentally, are still on warranty. Due to spare parts' shortages dozens of these machines are sitting idle.

Traffic disruptions are also caused by the massive numbers of delayed trains on the line. For example, in June there were 1,554 of them and in two weeks of July, 1,271. Practically every second or third train has a delay ranging from a few minutes to a few hours.

It is especially difficult for the collective at the Kiev Passenger Station. Traffic capacity has long been exhausted here. With the increased number of runs, especially international runs, an acute need has arisen to divert some through trains around Kiev. This applies first to Moscow traffic, which passes through here in the peak morning hours. For example, we suggested that Train 119 to Uzhgorod take the northern route through Korosten—Kalinkovichi. However, the passenger main administration has not looked at our request.

Because of the many nontransferable passenger and postal-baggage cars the Kiev Passenger Station has been

transformed into a classification yard. Platform tracks have to be used for switching.

It cannot be said that the Southwestern Railroad workers are blameless: In July 60 passenger trains were removed from the time table because of sluggishness and delays in servicing. Strenuous measures are being taken to correct the situation. MPS [Maintenance of way equipment stations] have been engaged to help permanent way divisions, the work of unit shifts is improving and the material interest of track, car and other workers has been increased. Of course, there is increased control over each railroad worker involved in transport operations. More demands are being made upon them.

Transbaykal—70 percent, 254 trains delayed. S. Shcherbakov, first deputy superintendent:

We have removed from the time table practically all trains passing through the Mogocha and Skovorodino divisions, where the schedules are only 39 and 31 percent met. Delays sometimes reach 6-8 hours. On 16 July the "Rossiya" was dispatched from the East Siberian Station 3 hours and 40 minutes late, while the same named train going the other direction left 5 hours and 30 minutes late.

A larger number of delays are the fault of workers in the transport service (139 out of 254 for half of July). On sections of these two divisions, especially near the stations of Mogocha, Chernyshevsk, and Shilka there are twice as many freight trains. Dispatchers are often powerless to move passenger trains through these traffic jams without delays. There are 280 slow down orders on the line, almost double the norm. MPS still do not have traffic "windows." This makes the situation even worse.

In spite of previous preventative work, after strong rains, the overhead contact wire supports started "leaking" current. This led to overheating of the contact wire and damage to electric locomotive pantographs. Electric power supplies were cut off several times.

In short, heavy traffic on the line is stopping traffic and passenger trains. The Skovorodino and Mogocha divisions remain barriers on the route. We called upon the help of the PMS from the Skovorodino and track workers from other units. In Mogocha an alternating set of rolling stock has been put into operation and new work techniques at the railroad center are being introduced. Improvements are being made in the system of material responsibility for meeting traffic schedules.

North Caucasus—87.8 percent, 463 trains delayed. V. Butakov, deputy superintendent of the line:

Our "health resort" line is experiencing the greatest difficulties during these days. The problem is not only that traffic capacity reserves on the North Caucasus Railroad have been exhausted. We are trying to "untie" our large rail centers. The schedule is now going to pieces. This breakup essentially began with the earthquake in Armenia. There are now 110 abandoned freight

car consists addressed to the Transcaucasian and Azerbaijan railroads. The "plug" at many stations paralyzes traffic, preventing the formation of long, double length trains, as was done last summer.

Trains have become smaller, but their number has increased. This means that more locomotives and crews are needed,—increasing the pressure. The smallest disruption creates a chain reaction of destruction in the schedule. Then, one after the other, there are emergency situations on the crossings. The last such case was at Makhachkala. Drunken youths were trying to race a freight train going to the Kama River Motor Vehicle Plant. There was a collision. Traffic was halted all night.

Those who are not informed about our problems become irritated when we talk about a shortage of ties, rails, switches and spare parts. This is our internal affair, it was once so conceived, but it has turned into the next emergency situation. Last Friday, 14 July, near the Loo station (close to Sochi), an electric locomotive and three cars of a mixed freight-passenger train were derailed at a switch. Nobody was physically injured. A traffic jam arose: All night they worked on the damaged track. On one side there were 20 passenger trains and on the other even more.

Schedule fulfillment declined a little bit more. The commission, of course, looked into it; either the switch or a wheel on the locomotive was at fault. No matter what the reason, the result is evident.

In the immediate future it is necessary to do something with 110 abandoned freight trains so that they do not interfere with freight traffic. It is necessary to help the operating services of the Main Administration for Transport: After all, the train receiving and unloading capacities of the Transcaucasian and the Azerbaijan railroads are known. Then why cram them full, and, acting in concert, dump "undigestible" flows of cars into the North Caucasus Railroad? Where is the operational regulation?

We are also beginning to be inundated with an unmanageable backhaul freight flow. Overfull stations force our neighbors to send us huge numbers of trains in violation of formation plans. This also breaks down the schedule. I am not one to criticize others, but it is not right to remain quiet as if nothing is happening. Otherwise, we will once again risk becoming prisoners of events; then extreme measures will be necessary.

When this material was being prepared for transmission to the editors, it became known that a new wave of events in Sukhumi on the evening of 15 July paralyzed train movement.

We showed the lines' answers to the editors' questions to V. Shchapov, secretary of the Central Commission for Control over Train Schedule Observation and head of the Technical Department at the Main Administration

for Transport. Here we discovered that we had overlooked the Volga Railroad, which is lagging more than all the main lines named. In July it had the lowest level of passenger train schedule observation—70.2 percent, and the largest number of delayed trains—600.

“Characteristic for most answers,” said Valeriy Ivanovich, “is the reference to ‘objective’ reasons. In particular, to the poor condition of the track, the large number of slow down orders and the shortage of materials to eliminate them.”

However, let us look at what was allocated to the lines for this purpose last year: Southwestern—455.8 kilometers of rail and 693 assembled switches; the North Caucas—641.2 and 1,015; the Volga—397 and 533. They should have been rationally used on the largest sections on the main routes. Then there would have been less to complain about during the peak traffic season. The schedule, they say, sets one number of slow down orders, while in reality there are a great many more.

At the ministry they know about the problems on the Southwestern (and other railroads), in particular those at the Kiev Railroad center. They are rightly aware of railroad workers’ efforts to run on schedule and to reduce passenger train delays as much as possible. Nevertheless, on the Southwestern there has arisen an unjustified gap between “our” passenger trains and international ones: the first group was 96.5 percent on schedule in July, while the second only 76.4. Twenty percent is damaging to our prestige.

Summer is at its zenith; ahead is the very peak load. Everything must be done to eliminate poor coordination. Trains should run on schedule.

Railroad Workers’ Grievances Aired

18290280 Moscow IZVESTIYA in Russian
Morning Edition 26 Aug 89 p 1

[Interview with L.B. Titova, secretary of the central committee of the trade union for railroad and transportation construction workers, by V. Romanyuk: “The Trade Union Is Defending the Interests of Workers”; date and place not specified]

[Text] [bold]The renewal of the Soviet society and the difficult situation in the country are setting new tasks for the trade unions. Not attempts “to restrain passions” but the ability to direct the energy of people into the acceleration of restructuring processes are what justify the authority and right to leadership of the trade union committee today. There are still few such examples but they do exist. The central committee of the trade union for railroad and transportation construction workers, which has decisively taken the side of the working people and their just demands, has taken an active position.

“When there was a worsening of the collective labor conflicts in the mines of Kuzbass and then Donbass, there were fears that the transport workers may also be

drawn into them,” relates L.B. Titova, secretary of the trade union’s central committee. “By the way, the railroad workers of both fields expressed their solidarity with the demands of the miners and there were even short warning strikes in transportation. Recognizing the entire gravity of the situation, the central committee of the trade union took the initiative in its own hands. In the central committee presidium, they examined the demands coming from the railroads aimed at improving the transportation process and the working conditions and recreation of people, at improving the wages of railroad workers and at resolving social problems. Acknowledging them to be basically justified, the trade union central committee presented to Minister of Railroads N.S. Konarev 41 worker demands relating to the competence of the ministry; another 29 demands were addressed to the USSR Council of Ministers.

[Romanyuk] And what was carried out?

[Titova] I cannot say that all of them were carried out but much is being done. For example, provision has been made for the practice of distributing the stimulatory funds of transportation enterprises so that different kinds of supplementary payments of leading workers do not exceed the bonuses paid to workers. The minister issued an order aimed at eliminating this injustice. We have satisfied an important, in my view, demand that the workers be issued a free uniform, above all for operational personnel.

[Romanyuk] Were there not a lot of demands of a physical nature?

[Titova] Most often they are fair. In general, many new questions are arising in the process of dealing with people and in the course of selector conferences, analyses and appeals. Thus, at the last selector conference, a machinist from the station Argyz of the Gorkiy railroad declared that the local railroad workers had been refused supplementary payments under the rayon coefficient under the pretext that they are frequently gone....

An obvious injustice! We demanded the standardization of the accepted payment coefficients not according to branches of the national economy but as a function of climatic conditions and the territorial characteristics of the work.

Or take the supplementary payments for second and night shifts. We are striving for the introduction of the supplementary payments foreseen by law on 1 January 1990. This will require more than 220 million rubles annually. However complex the budgetary problems may be, the state is obligated to come up with these funds.

In principle, the resolution of the conflicts takes place in two opposite directions—from below, from the labor collectives, and from above, from the trade union central committee and government bodies. This perceptibly normalizes the situation. The people see that there is real progress and they have more confidence in us. By the

way, they are calling the trade union central committee more often. Yesterday evening the director of Nizhnekamsk Station called: he has a suggestion on improving the transport work but he cannot get through to the minister. I then appealed to Comrade Konarev and asked him to look at the suggestions of the station chief.

But not everything is easy to resolve. Little has been done to reduce and improve the structure of the administrative system for the railroads and their divisions. An eminently internal question—the establishment of technical “windows” in the movement of trains for the repair of the contact system and the track structure—is also being resolved poorly. In essence, the repairs have to be made during the operation of trains, under difficult conditions and disrupting technology. We are also still putting up with the fact that many women are employed in burdensome work. Well, we will have to present the matter to the minister as it is.

[Romanyuk] To what extent was the fact that the deputies initially rejected the candidacy of N.S. Konarev in his confirmation for the position of minister reflected in satisfying the demands of railroad workers?

[Titova] The questions were examined not only by the minister but also by the board. And Nikolay Semenovich himself, appearing on the program “Vremya,” declared that he must remain at his post until the end, this being required by the specific nature of the branch. I think that the criticism from the deputies benefited not just the minister. The work of the Ministry of Railways had become too “stuck” on the questions of technology and operational matters. And at the same time, little attention was being paid, let us say, to the regulation of the working conditions of the locomotive brigades (the number of overtime hours has remained excessively high). The enormous flow of freight, the disruptions of technology and the shortage of locomotives had all impacted each other and the interests of people had been pushed aside.

[Romanyuk] Nevertheless, there is still the notion that railroad transport is a “state within a state” with a large number of privileges in comparison with other branches....

[Titova] All of this is in the past. Yes, we now have many palaces of culture and sports facilities but all of this is in a decrepit state. Quite a lot of housing has been built but basically it was barracks, crude frame houses that do not meet current requirements. To resolve the housing problem in the branch by the year 2000, it is necessary to introduce 70,000 apartments annually in the 13th Five-Year Plan and 80,000 annually in the 14th Five-Year Plan. We are now reaching the rate of 50,000 apartments a year and a further increase is being restrained by a shortage of finishing and plumbing materials.

Take the Donbass, for example. The miners there achieved the resolution of a number of social and economic problems. The situation is different for railroad

workers: they are successful in resolving some things but others remain in question. The Donbass railroad workers have the possibility of constructing 54,000 square meters of housing a year. But the Ministry of Railways is allocating capital investments supported by the necessary resources for only 36,000 square meters. We along with the ministry are seeking a solution that will satisfy everyone.

The situation at line stations remains complex. It is good if they are located in small cities where there are stores, a bank and other facilities. But what if there is nothing? The branch has extremely few train-clubs, polyclinics on wheels and refrigerator cars. But today, when the distribution of products has been turned over to the ispolkoms of soviets, many stations are really in distress. The trade union central committee supported the demand of the collectives of line stations for their transfer to centralized supply through workers supply departments. They appealed to the USSR Council of Ministers, from which the order was issued to the USSR Ministry of Trade to look into it. And there they decided to perform an “experiment,” in other words, to slow things down. Such a decision cannot suit us.

[Romanyuk] Nevertheless, Lyudmila Borisovna, is it possible today to say that the situation in transportation has been eased and that there is no danger of the rise of conflicts in the near future?

[Titova] In any case, everything possible is being done for this. As recently as 27 July, we had a meeting with workers representing all occupations in rail transport. They accepted an appeal to all of the country’s railroad workers. It included a call not to permit violations of the normal routine of the railroads. As of yesterday, 425 proposals included in letters, telegrams and simply in phone calls from railroad workers and transport builders had been accepted for review. The trade union central committee still has in operation a “hot line,” a direct telephone link through which on any day one can receive the advice and operational help of responsible branch workers.

Of the large number of telegrams received in recent days, only one—from a construction brigade in the Urals—contains an ultimatum with the threat of declaring a strike. In general, the people believe that it is possible to resolve the most acute problems without resorting to the extreme measure of a strike.

Amur River Rail Crossing Reconstruction Noted

18290260 Moscow GUDOK in Russian 13 Aug 89 p 1

[Article by A. Yakimov: “New Bridge on Old Piers”]

[Text] Specialists and representatives of the Khabarovsk public came to this decision after discussing the possibilities of reconstructing the Amur River rail crossing.

Who could have expected that an ordinary report in the kray newspaper, which said that specialists of the "Dal-giprotrans" [Far Eastern State Planning and Surveying Institute for the Survey and Planning of Large Bridges] had begun drawing up plans for reconstruction of a bridge at Khabarovsk, would evoke such a response?

Suddenly, it turned out that the fate of the bridge concerns hundreds of people and that they consider this openwork structure to be almost a symbol of the city, an integral part of its architecture. It turned out that very many know well the history of this creation of Lavr Proskuryakov. Do we have the right to destroy a monument of Russian engineering thought?

In the arguments, it was somehow forgotten that more than 70 years have passed since that time, and the city is about to step across the Amur. The crowding in the suburban trains leading to the vast garden tracts of city dwellers also was not taken into account. Facts known to the specialists were not taken into consideration: a motor vehicle crossing is really needed for development of the left-bank portion of the kray; the limited capacity of the single-track railway causes trains to stand idle on both sides of the river.

"Finally," A. Pisarkiy, deputy chief engineer of the Far Eastern Railroad, completed the picture, "the bridge has long lagged behind the development of rail transport. It is not designed for the weight of today's trains, and some freight falls beyond clearance limits. And it has become 'decrepit.' An examination detected growing processes of metal fatigue, corrosion, and a weakening of riveted joints. It costs 300,000 rubles annually to maintain the bridge in working condition, but these are only cosmetic repairs."

It was decided to submit for wide discussion several variants of reconstruction so the citizens themselves can choose the best one.

"We reviewed the possible reconstruction variants, taking into account the wide range of problems associated with development of the city by normalization of the railway," said A. Smyalovskiy, chief engineer of the Dalgiprotrans plans. "Strengthening the existing bridge with simultaneous development of a ferry crossing only 'stopped up the holes.' Erecting two new ones required huge expenditures. We settled on the third plan."

The point is, according to research data, the worn out structures are resting on perfectly well preserved piers that can withstand much greater loads. Therefore, it turned out to be realistic to erect additional piers on the ice aprons, lay one more track on them, then replace the aged framework, and after that...cover both with a solid roof and build a multi-lane highway on it.

The democratic decision was adopted. In 1991, the experimental collective of Bridge Building Trust No. 3 will begin erecting the first phase. It is planned to build the completely new bridge in 10 years without interrupting traffic for a single day. The thoroughness with

which the piers were erected early in the century saved the country at least 500 million rubles at the end of the century.

Tyumen-Yamburg Rail Line Highlighted

18290266 Moscow GUDOK in Russian
22 Aug 89 pp 1-4

[Article by A. Balashov, GUDOK correspondent, under the heading "In the Tyumen North": "Hello, Yamburg!"]

[Text] Viktor Vasilyevich Molozin is brigade leader of track fitters of SMP-522 [construction and installation train] of the Urengoytransstroy Trust and a Hero of Socialist Labor. He began laying track back at Tyumen and has brought his brigade almost right to Obskaya Guba [Bay] itself, to Yamburg. He has something to remember. And today, in this anniversary year for him—25 years as a brigade leader—he often reflects on the problems of building the main line in the Tyumen North.

"We were late in building the road," Molozin says pensively. "At least 2 years late. When the main loads for the gas workers were coming, there was no road, and now we are turning it over. It is both funny and a sin: we ended up 2 km short of the river port; there is no money, they say. They found money for 240 km, but not for 2 km!"

"But all the same, the road is needed," he adds confidently. "You see, there are terrible winds here 290 days of the year; in short, non-flying weather; and you won't go far in a vehicle, especially in the winter during a snowstorm."

There are 35 men in Molozin's brigade. They work without days off in shifts, appropriating 5-6 million rubles in a year—more than everyone in the Urengoytransstroy. There is another serious problem that worries construction workers not only in the north: the notorious gross output. Output is calculated in rubles, and it depends primarily on the cost of construction materials and structures. If they are expensive (for example, track structure elements, ballast), the output is high; if they are inexpensive (such as when building housing or cultural and communal facilities), you cannot even scrape together money for wages. That is why the construction workers like unfinished work so much: it feeds them. The Urengoytransstroy is waiting with horror for the day when the last ballast is laid on the Yamburg track, since no new construction projects are foreseen in the near future, and the gross output on "civilian" projects will drop catastrophically.

Viktor Vasilyevich apologizes: he has to take care of some urgent problems, and then he invites us to go for a ride on the handcar.

"Let's see how the students are there."

This is not the first time the construction detachment "Rovesnik" from the Kharkov Motor Transport Tekhnikum has helped the transport construction workers of the north. This is the second year in a row that some of the lads have come here.

"You can get by!" they shout with fervor, without interrupting their work.

"The norms are strict," Molozin explains. "It is kind of difficult for the lads, but they are managing."

The tundra begins two paces from the roadbed. It hurts to see the damage done to it by man. It is marked up by the awful, crisscrossing, unhealing scars left by wheels and tracks. Why was it necessary to taunt nature so? Looking back on this bacchanalia of barbarism, I automatically recall my recent impressions.

...Throwing up clouds of sand, the helicopter slowly lifts off from the ground and for several instants hovers over the helicopter pad, as if testing the unreliable, unstable wind elements. Then it gains altitude decisively and heads north.

In the spring and the first half of the summer, when temporary bridges are dismantled and the railroad comes to a standstill in anticipation of strong, high waters, the helicopter is the only means of communication between Novyy Urengoy and Yamburg. The rotary-winged birds deliver the shiftworkers to the site and supply them with food.

The sparse young growth of fir trees soon disappears from view, and the vast tundra opens wide. Somewhere at the very horizon, clouds rush along the tundra like a herd of reindeer, and the unusually low sun prolongs morning forever and ever.

From the altitude of a bird's flight, the summer tundra is striking with its diversity of shades of green: from light, almost dull green to the darkest green. And all this emerald-malachite splendor is adorned by a gold embroidery of river banks and silver necklaces of lakes. It is as if a fairy-tale giant had thrown off his designed deerskin overcoat.

The railroad is also very visible from above. It seems miniature and deserted. "Butts" of water supply pipes are piled up here and there, which apparently were excess. A tiny locomotive is pulling two lonely cars somewhere. One thing is clear—it will not reach Yamburg. Two unfinished large bridges across the Khab-erutta and Khadutte rivers will hold back trains for a long time yet. There is no framework. There is not enough metal. And how much of it is piled up here right next to the bridge! It would be enough for dozens of such bridges.

But here the cold bronze of Obskaya Guba in the distance flashed through the patina of the foggy haze, and the bow-legged giraffes of the river port cranes were nodding their heads, the same port which the railroad has not yet reached—Yamburg. There are neat blocks of

temporary houses, mainly Finnish. The population is 15,000. The main means of travel over the shifting sand of the streets is by the shift "Urals."

The first working trains should arrive here in late September, for which the Molozin's brigade is preparing the track. The brigade's small town on wheels is already quite near.

Incidentally, the conditions in the small town are decent. The dining hall serves a hearty and tasty meal, in any case, much better than in the public eating facilities of Novyy Urengoy.

"They are only tight with the water," complains Molozin. "There is so much of it all around, but you can't drink it. We haul it in from Yamburg; they distill it there. We pay 80 kopecks per cubic meter. Now it's right next to us, but before..."

Viktor Vasilyevich recalls how in 1976 he laid the first kilometer of the railroad, then still to Novyy Urengoy. Music rang out at the Ult-Yagun Station, and there were beautiful speeches—it was a celebration.

Then the humdrum existence began: rails, ties, ballast...

And the kilometers came with increasing difficulty each year. The tundra, the polar night, frosts, wind, and now the constant irregularities with materials. But the main line still moved northward, albeit slowly.

We left Yamburg with a sort of strange feeling. On the one hand, spellbound by the harsh beauty of nature in the Arctic and the "immenseness" of the changes, but on the other hand, deeply disappointed with the barbaric attitude toward this very nature and the incomprehensible wastefulness. Yes, it is difficult to build in the north. But it could be done without much needless labor, meaning that it could be done more quickly and more cheaply. We took consolation only in the hope that these mistakes will serve, finally, as a good lesson. After all, this is not the last construction project in the north.

Experts Review High-Speed Rail Line

18290284a Moscow TRANSPORTNOYE
STROITELSTVO in Russian No. 8 Aug 89 pp 4-6

[Press conference by L.N. Danilchik, director of Lengiprotrans [Leningrad State Design-Research Institute of the Main Administration of Planning Design of the USSR Ministry of Transport Construction], A. Ya. Khralov, chief specialist of the Lengiprotrans Division of Railroads, and K.A. Kochetkov, chief engineer of the Lengiprotrans Project, by V.Ye. Delyukin, special TRANSPORTNOYE STROITELSTVO correspondent: "The Mainline of the New Generation: 'Airplane' Delivery, Comfort and Ecology"]

[Text] One of the concepts of the development of "steel mainlines" is the increased speed of rolling stock, and this

acceleration of transport is an economic advantage. In other words—an intelligent reserve in the national economy.

A press conference for journalists from Moscow, Leningrad and Novgorod, organized by the management of the October Railroad on the ER200 express train, was devoted to this subject and a number of others. V.Ye. Delyukin, special correspondent of our journal, participated in this press-conference.

The present-day railroad line from Moscow to Leningrad has already exhausted its throughput reserves. At present, the train speed on certain sections reaches 200 km/hr. The time en route, however, is essentially 8 hours. Only two trains go more quickly: the Avrova, in 5 hours and 50 minutes and the ER200, in 4 hrs and 39 minutes. A speed of 200 km/hr and over is a qualitatively new stage in the development of railroad transport, requiring revision not only of the technical, but also of the economic standpoints.

The decision to work out a program of "High-Speed and Ecologically Pure Transport," which is being carried out under the direction of USSR GKNT [State Committee of the USSR Council of Ministers on Science and Technology] and the Presidium of the USSR Academy of Sciences, is of particular interest. The basic direction of this program is the construction of a high-speed specialized passenger mainline (VSM), Leningrad-Moscow-South.

[L.N. Danilchik, director of Lengiprotrans]: According to preliminary data, the section of the VSM between Leningrad and Moscow has the best economic indicators. It is specified as the main unit. The development of technical-economic considerations (TES) was entrusted to Lengiprotrans and the LIIZhT [Leningrad Institute of Railroad Transport Engineers]. A number of other organizations were drawn into the work. The VNIIZhT [All-Union Scientific Research Institute of Railroad Transport] is carrying out the overall coordination of working out the problems of the Leningrad-Moscow-South VSM. The general purchaser is the USSR Ministry of Railways.

The goals of the TES are: confirming the expediency of creating VSM in principle; selecting the type of transport to provide for the growing volume of transport; determining the basic technical-economic indicators, including the economic effectiveness and rates for passenger transport.

The preliminary data obtained in the studies makes it possible to judge the principal premises of the problem. At present, from 40 to 75 pairs of passenger trains circulate along the line from Leningrad to Moscow daily, including 45 long-distance runs, which transport up to 30,000 passengers a day in each direction. Sociological inquiries have shown that about 20 percent of the potential passengers are left off these trains, since they cannot get tickets.

Because of the predicted growth of cities and population mobility, it is expected that by the year 2005 the volume of passenger transport will increase by another 25-27 percent. Therefore, in the year 2005, under the condition of full accessibility of the trains on the railroad between Leningrad and Moscow, up to 50,000 passengers will be transported in each direction daily—1.5-fold more than today. In addition, aviation in 2005 will transport 700 persons between Leningrad and Moscow, and 1000 persons between Leningrad and the South daily. A 33-39-percent growth in freight traffic is also predicted by this time.

[Delyukin] What are the principal variants of developing the growing transport?

[A. Ya. Khralov, chief specialist of the Division of Railroads of Lengiprotrans] There are 5 principal variants, although in practice, 14 variants, allowing for the various combinations of passenger transport are being examined:

I—Build on the entire Leningrad-Moscow length, a mainline III and a mainline IV on approximately 50 percent of the length;

II—Build, on the entire length, a mainline III, which will provide passenger transport and shift freight traffic to a parallel course (through Budogoshch-Sonkov-Dno-Orsha with a large cross-run). For this it will be necessary to lay 456 km of second tracks on them, equip them with DTs [dispatcher centralization], electrify and perform a number of other operations;

III—Build a new high-speed passenger railroad along the shortest route (650 km);

IV—Build a passenger line using magnetic suspension between Leningrad and Moscow;

V—Shift some of the passengers from railroad transport to air (this requires constructing the new Tosno airport, constructing rapid transport—subway or monorail—to the airports in Leningrad and Moscow, introducing a system of ensuring flights regardless of weather conditions, etc.).

[Delyukin] The time en route for air transport between Leningrad and Moscow, allowing for the trip to the airports and for registration, is at present about 5 hours. The ER200 train, even though it "removes" up to four freight trains for one trip, will essentially cover the distance between the city centers in 4 hrs and 39 minutes. Can its speed be increased?

[K.A. Kochetkov, chief engineer of the Lengiprotrans project] It is impossible to increase the speed of 200 km/hr on the existing road for the following reasons. The curve radii are small (maximum overload should not exceed 0.2 "G"). At a higher speed, a passenger will simply be knocked off his feet. At 200 km/hr the radius of the curves should be at least 1500 m, and at 300 km/hr—3500 m, while the Leningrad-Moscow section has curve radii of 600 and 800 m.

The territory around the road is heavily built up. There are many highway crossings and junctions with approach tracks, which makes it impossible to guard the track reliably from transport, people and animals.

Mixed service (freight, passenger and express), as world experience shows, is considerably more dangerous than specialized. There are also restrictions on the electrification system (3 kw direct current).

With construction of the high speed mainline, the speed within the limits of the suburban areas of Leningrad and Moscow is specified as 200 km/hr, and on the remaining stretch—300 km/hr. The time en route will be 145 minutes (2 hours and 25 minutes).

[Delyukin] We have come right up to the planning of the high-speed Center-South mainline. Abroad, as we know, similar mainlines are already in operation, and roads with magnetic suspension are being built. Our country is also examining a line with magnetic suspension as a variant. What are the general considerations on this subject?

[Danilchik] First—the express passenger lines. They have been in operation (250 km/hr) in France, Japan, the FRG and a number of other countries since the 1960's. In the 1980's, France put into operation the TGV (express train) system, ensuring a steady speed of 300 km/hr, regardless of the upgrades and downgrades of the track. Spain, the FRG and Saudi Arabia are developing this type of system. Among the TZhV experimental trains, the Atlantique exceeded a speed of 400 km/hr.

In Japan they are building roads with magnetic suspension, as a rule, from city centers to airports, and the speed is 250-300 km/hr. High-speed surface transport mainlines on magnetic suspension for traffic with a speed of up to 500 km/hr, however, are only in the design stage in the FRG, England, Japan and Canada.

Our country is operating a polygon 0.7 km long, where speeds of up to 50 km/hr are carried out.

The cost of transport using magnetic suspension is exceptionally high (up to 100 million dollars per km). This is because of the need to lay tracks for the whole length on trestles or in tunnels. Under our conditions, this type of transport can be competitive in a mountainous region or in city limits. The approximate cost of the trestle (even without allowing for other developments) will be, on the average belt, 15 million rubles/km, approximately 5-fold higher than a double-track line with electric traction.

Considering the extremely high cost, the lack of world experience in operating mainline transport on magnetic suspension, and the necessary scientific and practical work already in progress in the USSR, it is clearly unrealistic, in our opinion, to create this sort of line between Leningrad and Moscow (variant IV) before the year 2000. At the same time, it is interesting to perform

the technical-economic calculations for a line on magnetic suspension for a length of 20-30 km in Leningrad from the nearest subway station to a mass recreation site for workers.

I will speak of the air transport variation (V) at the same time. It will be a big problem to provide guaranteed regularity of the flights (up to 100 runs of type IL-86 airbuses at a time convenient for passengers, between 0600 to 2400 hours, i.e., every 10 minutes, under any weather conditions). The noise and air pollution will be sharply intensified. Even allowing for the construction of a subway to the airports, the time en route will be over 3 hours, more than along a VSM. The cost of variant V is of the same order as the VSM.

[Delyukin] Does this mean that the first three railroad variants are more promising?

[Khralov] Variants I and II are practically equal. Variant III (VSM) is approximately 700-800 million rubles more expensive than they are. If, however, variants I and II specify regular traffic of type ER200 trains, which require through main tracks III and IV between Leningrad and Moscow, all three variants will become practically equal.

Without drawing any final conclusions, we can already indicate the great attractiveness of the VSM variant. Technically, VSM is a double-track railroad line, electrified on alternating current. The speed of a special electrically powered consist is 300 km/hr (structurally, 350 km/hr). Passenger stations are located every 60-80 km, and housing settlements for 700-800 persons each, every 120-160 km.

In the suburban zones, the VSM runs alongside the existing railroad (Leningrad-Sablino and Kryukovo-Moscow). On the remaining stretch, it goes from 10-40 km away from it. The route bypasses existing preserves and game refuges. The final variant has not yet been chosen. It is being determined not only by the cost indicators, but also by public opinion in the areas where the VSM will pass.

Highways will intersect only at different levels. To prevent people and animals from going onto the track, guard fences are to be constructed alongside the VSM, which will also reduce the noise at population centers to a certain extent. Train traffic will cease from 0000 to 0600 for repair and maintenance work.

The Leningrad-Moscow section is regarded as the pilot link of the Center-South VSM. In the long-term it will be possible to go into Finland (along the Tosno-Vyborg route) and the Scandinavian countries.

[Delyukin] A common question: what will the passenger gain? Right now, as we know, on certain days it is quite a problem to obtain a round trip ticket from Leningrad to Moscow.

[Kochetkov] Experience in foreign countries shows that on express mainlines the so-called "speed effect" occurs,

and the number of passengers grows by a factor of 1.6-2. Sociological inquiries in Leningrad showed that this effect also occurs in our country. For some services it fluctuates by a factor of from 1.05 to 1.4. Allowing for the speed effect, the number of passengers on the Leningrad-Moscow VSM by the year 2005 will be: with construction of a VSM only to Moscow—17,000 a day, and with construction of a VSM to the South (Simferopol, Adler and Mineralnyye Vody)—27,000 a day. In addition, 3000-4000 passengers are anticipated from Leningrad and Moscow to Novgorod, which is slated to be turned into a historical-cultural tourist center of world significance.

The number of trains on the VSM between Leningrad and Moscow will be 42 pairs a day (22 to Moscow and 20 to the South), not counting 4 pair of Novgorod trains.

Shifting the main passenger service to the VSM will make it possible to unload the existing line of long-distance trains and organize on it traffic of high-speed electric trains in local service (Bologoye, Kalinin, etc. from the Moscow, Leningrad line and between them) and sharply cut the time en route as compared with the existing schedule.

The VSM train is designed with a capacity of 912 seats (aircraft-type seats). According to calculations, 80 percent occupancy of the cars is assumed. Tickets will be sold both in advance and on the car itself. Trips on VSM trains are slated to be comfortable and have services on the level of the best world achievements (catering, video-information, international telephone connections, hotel and taxi orders, souvenir sales).

VSM trains will arrive at and depart from the Moscow and Leningrad terminals. Variants of the new terminal at Kupchino and elsewhere are considered the basis. The following train traffic schedule is planned on the VSM:

About 75-80 percent of all the trains, running nonstop, will depart from Leningrad and Moscow in the period from 0600 to 0800 and from 1800 to 2100. The time en route—2.5 hours, to Novgorod from Leningrad—1.5 hours, and from Moscow—2.5 hours.

Some 20-25 percent of the trains will depart from Leningrad and Moscow in the period from 0800 to 1800 (on the average every 2 hours), running (if necessary) with all stops. The time en route—3-4 hours.

[Delyukin] The last question. Who will do the construction, what will the VSM cost and what will the payback period be?

[Danilchik] The VSM can be constructed in the course of 8-10 years. This requires the creation of a new PSMO with a capacity of up to 40 million rubles worth of construction-installation work a year according to the master plan (roughly in the Bologoye-Kalinin area).

The cost of constructing the VSM is approximately 2.4 billion rubles, including 2.0 billion rubles worth of

objects for production purposes. The cost per km of track is about 3.5 million rubles.

Some 24 consists, costing 6.3 million rubles each, a total of 150 million rubles, will be needed for the amounts of traffic in the year 2005 (not counting the southern trains). In our opinion, it would be more expedient to purchase the prototype electric-powered consist abroad.

If only trains in the Leningrad-Moscow service and with Novgorod are shifted onto the VSM (that is, with the construction of the Moscow-South VSM put off to the distant future), construction of the Leningrad-Moscow VSM and acquisition of the rolling stock will be fully paid back (allowing for the outlined 40-45 percent rise in the price of electric power): in 10 years with the cost of the ticket 27 rubles, and in 50 years with the cost of the ticket 12 rubles (today's rate).

The difference in the cost of constructing the Leningrad-Moscow VSM and intensifying the existing run (about 0.8 billion rubles) will be paid back in 10 years at the existing rate. As a rule, these roads are fully paid back in 9-12 years in the West.

It should be noted that the cost of a ticket on a Leningrad-Moscow airplane is now 18 rubles, and, in consideration of the outlined rise in prices for fuel (by a factor of 2.3), can increase to 28 rubles.

Therefore, a high-speed route will revolutionize progress in transport. With the introduction of a Center-South express mainline, "airplane conveyance" to the health resorts of the Crimea and the Caucasus will be guaranteed for a passenger. The advantage of a VSM over air and motor vehicle transport is its ecological purity.

COPYRIGHT: "Transportnoye stroitelstvo", 1989

UDC 625.11.111

French Assist in High-Speed Line Design

18290284b Moscow TRANSPORTNOYE
STROITELSTVO in Russian No 8, Aug 89 pp 6-7

[Article by E.Z. Selektor, candidate in Technical Sciences (Oktyabr Railroad): "We Need Foreign Experience"]

[Text] The throughput capacity of the mainline connecting Moscow and Leningrad with the Crimea and the Caucasus, along which, in addition to passenger trains, a considerable number of freight and suburban trains will run, is virtually at its limit. The route speeds of passenger trains on this line are tending toward a yearly reduction (they can be increased only to the detriment of freight and suburban transport).

Attempts have recently been made to reduce the acuteness of the problem of passenger transport on this line by increasing the number of cars on a train to 20-24, and in the future—to 32. Normal operation of these consists

requires the renovation of major stations and lengthening the entry-exit tracks and boarding platforms. This will have to be done under conditions of incessant traffic, with a large number of "windows," which sharply complicates the operation of the line and requires, in a number of cases, considerable additional capital investments. These measures, however, do not have a major effect on solving the problem of increasing the speeds of passenger service.

The experiment of operating, on the Moscow-Leningrad line, the ER200 electric train, which develops a speed of up to 200 km/hr, showed that a considerable number of ordinary freight and passenger trains had to be "taken off" the schedule. In addition, in organizing high-speed and slow traffic along the same line, its technical equipment should be estimated for the throughput of high-speed consists, which causes perceptible additional financial, material-technical and labor expenditures. Therefore, it is hardly expedient to organize traffic here with a speed of over 200 km/hr.

In the situation that has been created, an acceptable solution is, for example, construction of a specialized high-speed railroad mainline—North (Leningrad)-Center (Moscow)-South (the Crimea and Caucasus), which as a result could fully provide continually growing volumes of passenger transport and reduce several-fold the time en route. The project for this line can be carried out on the basis of the traditional "wheel-rails" system or by using magnetic suspension.

At present, all the high-speed lines in operation and in the construction or planning stages in the countries of Western Europe and Japan are calculated for the use of wheeled rolling stock.

The highest speeds of passenger service, of 270 km/hr, are being realized in France on the Paris-Southeast line, where electric trains of the TGV type are in circulation (in 1981 this train established a world speed record of 380 km/hr). In 1990 the Atlantique line will be put into operation here, and it is planned to achieve a speed of up to 300 km/hr.

In 1991 the FRG should put into operation the first high-speed line, running electric trains of the ICE type, which developed a speed of 406 km/hr on test runs.

In Japan, the maximum train speed is 260 km/hr, and on the high-speed Rome-Milan line, being constructed in Italy, electrified by direct current, it is proposed that train speeds be brought up to 250 km/hr (in other countries, high-speed mainlines are being electrified only on alternating current).

As for the existing roads with magnetic suspension, they are negligible in length and are used mainly for intercity service and connecting airports with the city center. The speeds on them are relatively low. Designs for lines with magnetic suspension of the rolling stock are in the developmental stage. Specifically, the FRG has drawn up and tested a model of a Transrapid-06 train, capable of

accelerating up to 400 km/hr and transporting 196 passengers. The Tissen firm is working on creating a model of a Transrapid-07 train, calculated to transport 172 passengers and 40 tons of freight. According to the estimates of the developers, it can accelerate to 500 km/hr.

Right now in the USSR at VNIIZhT [All-Union Scientific Research Institute of Railroad Transport], on the basis of the "wheel-rails" system, preplanning work is being done on a specialized high-speed mainline, North-Center-South, which will run from Leningrad through Moscow and Kharkov to the Crimea and the Caucasus. This line is to be electrified on a single-phase 25 kV alternating current. The electric trains here will accelerate up to 300-350 km/hr¹.

Maximal use of foreign experience should be utilized in working out the design for a specialized high-speed line and in its construction. The first steps toward this have already been taken. A seminar of a Soviet-French work group on economic and scientific-technical collaboration in the sphere of railroad transport, held in Moscow in December 1988, discussed a program of cooperation in the sphere of high-speed traffic. In accordance with this program, French specialists will take part in the planning and construction of the North-Center-South high-speed mainline.

Footnote

1. TRANSPORTNOYE STROITELSTVO-VO, 1988, No 10, p 14.

COPYRIGHT: "Transportnoye stroitelstvo", 1989

Gas-Fueled Locomotives Research Examined

18290234 Moscow GAZOVAYA PROMYSHLENNOST
in Russian No 6, Jun 89 pp 52-54

[Article by A.A. Chichkin, associate at the Complex Transportation Problems Institute under the USSR Gosplan, under the heading "Problems and Prospects of Gas Supply": "Gas Fuel in Rail Transportation"]

[Text] *The approach to substituting gas for petroleum fuels has taken on a traditional nature in scientific spheres, making it possible to develop in practice the gas motorization of the country's motor transport. The indisputable ecological and resource advantages of the alternative motor fuel are increasing economists' interest in searching for the most advantageous solutions of converting all types of domestic transport to gas. In this article, A.A. Chichkin, associate at the Complex Transportation Problems Institute under the USSR Gosplan, examines variants of the possible use of gas on railroads.*

History of the Issue

Scientific research and design proposals for using liquified natural gas, compressed natural gas, compressed petroleum gas, and producer gas from coal, shale, peat, and wood have been conducted in our country and

abroad since the 1930's. Back in 1892, a self-propelled car was developed with a gas engine which was fueled by compressed illuminating gas. In the 1930's-1950's (with interruptions), experimental operation of diesel locomotives and gasoline locomotives operating on compressed natural gas, compressed petroleum gas, and producer gas using a gas-diesel cycle was conducted. During the Great Patriotic War and the Fourth Five-Year Plan (1946-1950), E-EI-1, TE1, and TE2 diesel locomotives running on compressed petroleum gas were operated on a number of sectors of the rail network (in Tataria and Azerbaijan). Later, TE2-TE3 locomotives running on compressed natural gas and compressed petroleum gas were also operated on mainline traffic. In 1957-1958, by decision of the USSR Council of Ministers, the Ministry of Railways and the Ministry of Transportation Machine Building examined questions of using compressed petroleum gas in diesel locomotives in regions of the rail network, but due to large capital investments in gas supply and in the system of rail transport material and technical support, this trend was considered inefficient. At the same time, they noted the economic feasibility of using compressed petroleum gas in diesel locomotives in oil-refining areas (Azerbaijan, Turkmenia, Tataria, and others). In 1958, the specifications were approved for planning gas engines for diesel locomotives, gas-cylinder tenders, and gas-filling stations.

Abroad (the countries of Western Europe, the U.S., Canada, Australia, the Republic of South Africa), work on using alternative fuels on railroads encompasses a variety of these fuels (gas fuels; mixtures of biogas, methanol and ethanol with diesel fuel; water-fuel emulsions; etc.), but it is concentrated mainly in the sphere of low-power engines (200-500 hp). In the U.S., there are two diesel locomotives operating on compressed natural gas in the gas-diesel mode. It should be noted that questions of using alternative fuels are being worked on abroad, but no one fuel is "predominant" in scientific research and development work or has the nature of a "general direction" of conserving petroleum motor fuels.

Experience of converting locomotive diesel engines to gas fuel attests to the possibility of preserving the rated power and achieving high efficiency—up to 35-38 percent in two-cycle and 38-40 percent in four-cycle models.

The low energy content of a volume unit of natural gas (1,000 times less than diesel fuel) limits the possible scale and effectiveness of using gas on railroads. Ensuring the necessary mileage of diesel locomotives using natural gas requires using either compressed natural gas in metal cylinders under a pressure of up to 20 MPa or liquified gas at a temperature of -162 degrees C using cryogenic tanks as transportable reservoirs.

Reasons for the Priority of Gas Motorization

Joint programs of a number of sectors call for delivering to rail transport in the current 5-year plan mainline gas-diesel locomotives using liquified gas as fuel. By 1990, three prototypes based on the 2TE116 and 2TE10

mainline diesel locomotives should be built and tested, and 35 mainline and 5 switching diesel locomotives running on gas fuel should be delivered. In 1986, the USSR Gosplan and the State Committee for Science and Technology approved a program (for the period up to 1992) of development of scientific research and development work for using liquified natural gas in rail, motor, and river transport.

For a number of operating indicators (wear of parts and assemblies, toxicity of exhaust gases, oil consumption), gas-diesel and gas engines have an advantage over traditional diesel engines, and this fact, besides the need to conserve petroleum fuel, also influences the development of scientific research and development work and the use of gas diesel locomotives. However, the effectiveness of using gas diesel locomotives cannot be ensured without resolving the problem of increasing the operating reliability of diesel locomotive traction.

In principle, gas diesel locomotives in the gas-diesel variant can save up to 50-70 percent of diesel fuel by using natural gas, and up to 80 percent with further design improvement. However, this saving in current conditions is negated at today's prices for diesel and gas fuel and the necessary cryogenic equipment, taking into account the costs for creating the infrastructure for supplying gas for rail transport. Taking into account the development of electrification and the presence of low-volume sectors of the rail network, the proving ground for possible introduction of mainline gas diesel locomotives is potentially estimated at 43,000 km for the period 1995-2000. According to preliminary estimates, a reduction of diesel fuel consumption of up to 3.7-4.4 million tons can be expected by using liquified natural gas with capital investments of about 4 billion rubles; using compressed natural gas, the required capital investments are estimated at 1.7 billion rubles.

Studies by the All-Union Railroad Transport Scientific Research Institute, the Rostov-na-Donu Railroad Transport Engineers Institute, and the Complex Transportation Problems Institute show in today's conditions the economic unprofitableness of using liquified natural gas on mainline diesel locomotives (500,000-700,000 rubles per locomotive during the time of operation) and, accordingly, compressed natural gas, although the "unprofitableness" of compressed natural gas is considerably lower (250,000-300,000 rubles). Of course, the final technical and economic estimate can be given only in the process of comprehensive studies of the entire complex of questions on the building and developmental and operational testing of prototypes of gas diesel locomotives and cryogenic equipment based on an analysis and balance of energy resources taking into account changes in fuel prices in the future.

By the present time, the technical request and terms for delivery and the volume of testing of gas diesel locomotives and cryogenic equipment have been approved. Proposals have been drawn up for supplying liquified natural gas for the gas diesel locomotives during the

testing: the engine-generator sets (Plant imeni Malyshev Production Association) have been delivered to the manufacturing plant in a gas-diesel variant. A base depot on the Donetsk Railroad has been selected for conducting operational testing of three prototype mainline gas diesel locomotives.

Thorough Technical Restructuring Is Required

However, implementing the program of gasification of rail transport entails numerous problems caused by the disclosed unpreparedness of a number of industrial sectors and enterprises—manufacturers of the necessary equipment—involved in research and development for using fuel gas on the railroads for material and technical support of scientific research data. Thus, variants of refueling cryogenic units of gas diesel locomotives with liquified natural gas in conditions of operational testing have not been developed taking into account the requirements fire safety and explosion safety: no procedures exist for delivery testing of gas diesel locomotives, gas-diesel engines, and cryogenic equipment. Equipment for delivering compressed natural gas (in the form of tank cars or gas trucks with cryogenic reservoirs with a capacity of at least 25 cubic meters), for refueling stations, and for liquifying gas in a unitized design with their possible use on various sectors of the rail network have not been ordered. The "Kriotekhnika" Scientific Production Association has not resolved the question of supplying storage facilities (tanks) for jettisoning of liquified natural gas. According to data of the scientific production association, the cost of manufacturing such a storage facility with a capacity of up to 100 cubic meters is 300,000-350,000 rubles.

It has been established that gas-diesel engines (10GD100B) do not provide the full power rating ($0.65N_{nom}$) when switching to the diesel mode without additional adjustments at the depot. When operating in the gas-diesel mode, the desired fuel consumption indicators are exceeded by 10-12 percent for diesel locomotive performance, and the percentage of diesel fuel burned increases (to 24 percent instead of 8-15 percent). In gas engines with electronic ignition, switching to petroleum fuel requires disassembly of the gas apparatus and ignition system; this work can be done only at the depot over a period of 24-36 hours.

In the event of using a "purely" gas variant engine (with electronic ignition), it is possible to use other alternative fuels—hydrogen, alcohol fuels, and others.

According to the Technical Operating Rules of the Ministry of Railways, operation of cryogenic tenders (tankers), equipped with vacuum insulation and with gas fuel, as part of the diesel locomotives is possible only in freight traffic. Restricted areas with a 300-meter radius are necessary near draining-filling platforms due to the increased fire hazard. This circumstance rules out the possibility of refueling locomotives at sector stations without uncoupling the train, unlike locomotives operating on petroleum fuel. Station facilities of the majority

of railroads virtually do not have reserves of free areas, and the existing intervals between trains does not permit uncoupling of the train and refueling on the station tracks. Consequently, refueling is possible only at points located on depot tracks. One cryogenic tanker-tender with liquified natural gas (44.5 cubic meters) corresponds to the energy expenditures of two-section mainline diesel locomotives (2 X 3,000; 2 X 4,000 hp) per 1,000 meters, which, given an average daily run of 450-500 km for a locomotive, is 2 days of train operation. The cost of manufacturing one tender with a cryogenic tank is 350,000-400,000 rubles.

Technical and Economic Assessment of the Variants

Between 1986 and 1988, the All-Union Railroad Transport Scientific Research Institute conducted research and development work on using compressed natural gas in switching diesel locomotives. Based on the TEM2 series-produced diesel locomotive, a prototype of a gas diesel locomotive was built, and bench tests and train tests of it were conducted. These tests showed the possibility of ensuring the full power rating of the locomotive in the diesel and gas-diesel modes. In so doing, fuel economy was maintained and the exhaust gas smoke decreased; operation in the gas-diesel mode provided diesel fuel burn portion of 15-25 percent. The TEM2 was equipped with gas cylinders with a total capacity of 560 cubic meters at a pressure of 20 MPa.

Petroleum fuel is used at idle and with small loads, but in the nominal mode it is possible to substitute 85-90 percent of the diesel fuel with compressed natural gas. The locomotive can be refueled in 30-40 minutes with compressed gas for 2-3 days' operation using a PAGZ-2500 gas truck or from gas-filling compressor stations used in motor transport.

The results obtained for the gas diesel switching locomotive are basically also valid for mainline series. Preliminary studies by the All-Union Railroad Transport Scientific Research Institute of the Ministry of Railways show that a mobile reserve of compressed natural gas, equivalent to the diesel fuel reserve of mainline diesel locomotives, is achieved with a six-axle tender instead of a four-axle tender with liquified natural gas. Refueling a diesel locomotive with medium-pressure gas is possible from gas mains. For mainline gas-diesel locomotives with a tender 22.5 meters long with compressed natural gas cylinders and accessories, it is possible to ensure a two-section diesel locomotive (2 X 3,000 hp) mileage equal to that of a series-produced diesel locomotive.

A study of the technical and economic effectiveness of the gas-diesel switching locomotive performed by the scientific research institute jointly with the Bryansk Machine Building Plant showed that each TEM2 switching locomotive with a power rating of 1,200 hp and equipped with a tender with liquified natural gas, at existing prices for gas, would result in an economic loss of 200,000-240,000 rubles during the standard period of service. A decisive factor in this "loss" is the high cost

and limited period of service of the cryogenic equipment. In addition, operation of the switching locomotive with a cryogenic tender with liquified natural gas constantly coupled to it would not only be more difficult for the machine operators but also less productive under conditions of switching, collisions, limited visibility, gravity yard operations, and so forth. In the event of using compressed natural gas located in cylinders directly on the diesel locomotive, the TEM2G gas-diesel locomotive is virtually without loss-free (the "loss" is 18,000-20,000 rubles during the standard period of service).

When using liquified and compressed natural gas in mainline traffic, the operational expenditures for maintaining locomotive brigades, repair and maintenance of locomotives, and their equipment increase; these expenditure items in expenditure rates and the rates themselves (used when calculating the comparable effectiveness of using liquified natural gas, compressed natural gas, or a regular mainline diesel locomotive on sectors of the diesel locomotive proving ground) also increase accordingly. An increase in capital investments occurs as a result of an increase in expenditures for converting locomotives, re-equipping depots and equipment points, and the need for using cryogenic tenders (tanks) and storage facilities for liquified natural gas, and so forth. Constructing permanent restricted areas for gas-support of locomotives and laying gas lines also involve additional capital expenditures that must be taken into account in the calculations.

The least cited expenditures for obtaining liquified natural gas in today's conditions can take place when using the throttle-compressor plant of maximum capacity (at least 500,000 tons per year) being built at Abovyan (Armenian SSR); these costs are approximately 30 percent lower than for the same plant with an output of 170,000 tons per year, and 2.2 times lower than at an output of 40,000 tons per year. In addition, as preliminary calculations of the Complex Transportation Problems Institute show, the maximum productivity of liquified natural gas plants and the maximum number of refueling points receiving liquified natural gas from high-capacity plants (an output of 500,000 tons per year can supply up to 10 of these points with liquified natural gas) are decisive factors in reducing the costs of supplying the railroad network with liquified natural gas; these costs (per ton of liquified natural gas), counting storage and liquified natural gas losses from evaporation in the storage-transporting system (up to 0.4 percent of the volume), are 10 percent lower than with a plant with an output of 170,000 tons and almost 40 percent lower than at an output of 40,000 tons per year.*

These costs for supplying compressed petroleum gas (the annual capacity of an average refueling point is about twice as high as the design capacity of the AGNKS-500) roughly correspond to the cited costs for supplying the railroad network with liquified natural gas by a plant with an annual output of 170,000 tons, but these costs

are 18 percent higher than for a liquified natural gas plant with a capacity of 500,000 tons per year.

Calculations for certain sectors of the network show that the cited costs (per 1 km of line) with liquified natural gas are roughly 30 percent higher and with compressed petroleum gas 10 percent higher than in the base variant (diesel locomotive). Capital investments under the compressed petroleum gas variant are 20 percent less than when using liquified natural gas. The cited costs for replacing diesel fuel with gas fuel (per ton of fuel) are approximately one-fourth as much when using compressed petroleum gas than for the liquified natural gas variant. Compared with electrification, the "unprofitableness" of compressed petroleum gas is less than with using liquified natural gas.

Compressed Gas Is More Profitable than Liquified Gas

Thus, the results of by-sector calculations made reconfirm the conclusions of the All-Union Railroad Transport Scientific Research Institute and the Rostovna-Donu Railroad Transport Engineers Institute about the economic advantages of compressed natural gas, which must be taken into consideration when resolving questions of using one or another type of gas fuel on railroad transport. Using compressed petroleum gas as fuel in diesel locomotives may prove to be more promising in relation to accelerating introduction and also more economic for capital and operational expenditures.

The tasks of efficient use of natural gas in transportation require a more in-depth analysis, which often leads to the need for new, previously unforeseen approaches. It is quite possible that, when taking into account the total volume of expenditures for gasification of diesel locomotive operation, the residual oil system of supporting peak loads in the country's power system (instead of covering all the "peak situations" only with natural gas) will prove more profitable, particularly in the conditions of full self-financing and cost-accounting of all transportation facilities.

Footnote

*There are proposals to use a plant using the pressure differential of a gas-distribution station with a wave expansion valve for supplying the railroad with liquified natural gas.

COPYRIGHT: Izdatelstvo "Nedra", "Gazovaya promyshlennost", 1989

Merits of D49 Diesel Engine Noted

18290224 Moscow GUDOK in Russian 12 Jul 89 p 2

[Article by M. Lidina: "The Kolomna Strong Men"]

[Text] The Kolomna Plant production association, which manufactures passenger diesel locomotives, is the leading enterprise for developing and producing powerful engines for the national economy. In recent years, they have developed and already put into series production D49

standardized diesel engine. This work has been submitted for competition for the 1989 USSR State Prize.

The Kolomna Plant's TEP80, the most powerful passenger diesel engine in the world, was exhibited at the recent Railway Transport-89 international exhibition. It is capable of pulling 24 cars at a speed of up to 160 km per hour. The diesel generator rated at 6,000 hp is built by the Kolomna machine builders based on a new powerful bank of standardized D49 diesel engines. The history of their emergence is not simple.

For decades, diesels of various designs were produced in our country. Their production was uneconomical, and their maintenance and repair were difficult and costly. The diesels did not meet the high requirements, were low-power, and used much fuel.

The idea of creating an engine design from standardized, that is, single-type and therefore easily replaceable units and parts was attractive. As a result of many years of scientific research work and numerous experiments, a collective of Kolomna designers and manufacturing engineers, jointly with scientists and experienced workers, were able to create the base design. Based on it, it was possible to obtain engines rated between 800 and 6,000 hp. A reserve was also put in for further increasing the power.

The modular design ensures high efficiency not only of production but also of repair, since it makes it possible to mechanize and automate all processes to the maximum extent.

"The new diesel has taken into account the achievements of domestic science, engineering, and technology and foreign diesel building," says Ye. Nikitin, chief designer of the Kolomna Plant, winner of the USSR State Prize, and doctor of technical sciences. "For the first time in world diesel building we used the method of resistance welding for manufacturing cylinder blocks, a method developed by the Institute imeni Paton. This made it possible to increase labor productivity greatly and ensure high quality of the welds. We made wide use of modern methods of chemical-engineering treatment of the parts and special coatings to ensure high reliability and long-term operation without repair."

Elements of microprocessor technology were used for the first time in the D49 diesel engines for control of engine operation and its diagnostics. New designs were used, protected by 48 inventor certificates of specialists at the Kolomna Plant.

"Three-fourths of our diesel engines are used in locomotives. But they are also used on drilling rigs, mobile electric power plants, heavy-freight dump trucks with a carrying capacity of 170 to 250 tons, tractors, maritime drilling rigs, and ship power plants," states V. Berezhkov, chief engineer of the Kolomna Plant production association.

The new machines are distinguished not only by their high power but also by their high operating reliability and durability. They are not afraid of sharp temperature and climatic fluctuations; they operate successfully in areas of the far north as well as in the hot subtropics.

And what is very important, they are economical. The total economic gains for the national economy as a result of producing and operating the diesels between 1983 and 1987 were 166 million rubles, plus 24.6 million rubles for 1988. Each year, as the number of machines of this class being produced and operated increases, the gains will increase. The demand for them in the national economy is shown by the following estimated figures: 1,212 in 1990; 1,950 in 1995; and 2,650 in the year 2000.

How are millions of rubles saved?

"Above all, it is as a result of a 10-percent decrease in diesel fuel consumption and a 25-percent decrease in motor oil consumption compared to all other types of diesel engines. It is also due to the increase in the operating periods without reconditioning, the sharp reduction in the number of spare parts used for repairing the diesel engines, and a decrease in the amount of metal used and in the labor-intensiveness of the machines."

Standardizing the assemblies and blocks has made it possible to organize production of the diesel engines at two other enterprises: the Penza Diesel Plant and the Bryansk Machine Building Plant.

The new Kolomna engines are in wide use not only in our country. Approximately 20 percent of their output is exported to the CEMA countries, Syria, Egypt, France, Yugoslavia, and Pakistan.

Scientific and technical commissions of the State Committee for Science and Technology, jointly with representatives of the State Committee for Standards, the ministries and departments, rated the technical level of the D49 diesel engines as corresponding to the best world achievements. A comment by the Ministry of Railways stated directly: "The D49 diesel engines...are on the level of the best models in the world by their technical and economic characteristics." This conclusion was made as a result of extended operational testing of the engines in freight and passenger diesel locomotives operating in conditions of cold and hot climates. The operational tests showed that diesel engines of this type stand out favorably by their reliability and economy from all their predecessors.

The 2TE116 freight diesel locomotives, TEP70 passenger diesel locomotives, and TEM7 switching diesel locomotives are now being series-produced with the new Kolomna engines at plants in our country for orders by the Ministry of Railways. A large batch (about 50 machines) of 2TE121 freight diesel locomotives are undergoing operational testing on the Northern and Donetsk railroads.

By order of the Ministry of Railways, the Voroshilovgrad Diesel Locomotive Building Plant imeni Oktyabrskaya Revolyutsiya recently built two prototype 8-axle TE136 freight diesel locomotives with a power of 6,000 hp in the section with the D49 diesel engine. Both are now undergoing plant testing.

Meanwhile, the Kolomna designers continue to improve their brainchild. One direction of their creative quest is to increase the service period of the diesels between technical servicings and routine repairs by another 1.5- to 2-fold. This is being achieved through new design and engineering decisions and the use of promising materials.

They have already incorporated into production 26 modifications of the D49 diesel, and 8 more modifications are in the stage of development. Thousands of the new class of diesel engine are being operated at 798 points of our country.

A second direction in their work is creating on the basis of the D49 diesels modifications that will operate mainly on cheap natural gas instead of the scarce and expensive liquid diesel fuel. Two experimental gas-diesel generators have been built. They use a unique microprocessor system for controlling and protecting the diesel with electromagnetic gas-fuel supply valves. This makes it possible to control the engine according to a program developed in advance. Depending on the diesel locomotive's operating conditions, for example, the peculiarities of the track, the engine "itself" automatically changes the type of fuel.

Both gas-diesel generators have been installed in the new 2TE116T freight mainline diesel locomotives, which were also exhibited at the Railway Transport-89 international exhibition. This work, which is of enormous importance to the national economy both from the standpoint of saving oil resources and ecologically (considerably fewer harmful substances are emitted when burning natural gas than when burning diesel fuel), should be fully completed in 1991.

The third direction in the creative quest is to create modifications of engines with even greater power. But this work is in the long-term future, in the third millennium.

The group of inventors who participated in the development and introduction of the D49 diesel engine, 12 men under the supervision of Yevgeniy Aleksandrovich Nikitin, have been nominated for the competition of the 1989 USSR State Prize. The candidates were discussed not only by the plant scientific and technical council, but also by the councils of two union ministries—the Ministry of Heavy, Power, and Transport Machine Building and the Ministry of Railways.

MARITIME AND RIVER FLEETS

Organizations Servicing Fleet Highlighted

18290253 Moscow VODNYI TRANSPORT in Russian
27 Jul 89 p 2

[Interview with B. Tsirulnikov, chief expert of the Division of Comprehensive Service of the Fleet of the Ministry of the Maritime Fleet, by V. Kontseladov, VODNYI TRANSPORT correspondent: "Who Is Served by 'Transflot'"; date and place not given]

[Text] The 8th Plenum of the Central Committee of Trade Unions of the Maritime and River Fleet on the problem of "The State and Measures for Restructuring and Comprehensive Shore Service for Ships and Their Crews" is planned for November of this year.

The editors invite seamen, shore workers and those who are disturbed about the problems of comprehensive service for the fleet (KOF) to the discussion on its pages.

The letters coming to the editors from our readers attest to the fact that, under the conditions of the new system of economic activity, restructuring of the KOF is urgently required. What does it incorporate and what are its main directions? Our correspondent V. Kontseladov asked B. Tsirulnikov, chief expert of the Division of Comprehensive Service of the Fleet of the Ministry of the Maritime Fleet, to speak about this.

[Kontseladov] Boris Aleksandrovich, you recall that from time to time you have tried to solve the KOF problem by merging Transflot with Inflat—well?

[Tsirulnikov] Indeed, these attempts were made. The problem of transferring the functions of a Soviet ship agency to Inflat or amalgamating Transflot with Inflat, in accordance with the proposals of individual shipping companies, was next discussed by the ministry and it was deemed inexpedient for a number of reasons. One of them was that the main task of Inflat consists of export services for currency, while maintaining the status of an "independent agency," and to eliminate it, and transfer the work to the corresponding service of a shipping company, would have been detrimental to this.

As practical experience has shown, the attempts at this type of unification in individual shipping companies, for example, the Estonian, Azov and Murmansk, at the end of the 1960's and beginning of the 1970's, led to a sharp deterioration in the quality of the agency for foreign ships, despite a certain improvement in the service to Soviet ships. As a result, there was a reprimand from foreign ship owners, which entailed both moral and material losses. Personnel problems have also arisen, caused by the change in nature of the work involved in this amalgamation.

[Kontseladov] There is a great deal of talk today about transferring the Transflot functions to the ports. What is your opinion on this?

[Tsirulnikov] Right now the ports cannot independently, without the shipping companies, direct the work of services such as BTOF, ERNK, SMTS [not further identified], etc. In addition, in accordance with the status, the basic activity of the ports is processing the fleet, and if there were a merger, its service would be in the background, which has, incidentally, happened, for example in the Far East Shipping Company in 1986-1987.

The opinion exists, however, that ports with a sufficiently powerful material-technical base could still organize fleet service better than any other organization. As work experience shows, the ports, for all their supply of mechanisms, cranes, auxiliary fleet, etc., today perform less than 20 percent of the entire complex of services for a shipping company, and in many cases, the main load falls to the cities.

Also essential is the fact that the "Transflots," being the agents for the ship owners, ensure the regulation of various problems and claims, including those between ship and port, for example, turning over cargo to the port on behalf of the ship.

The proposal to divide the sphere of activity between the port and Transflot will, in my opinion, lead to group responsibility, which is unfortunately taking place even now, when the KOF participants lump the blame for an unfulfilled order from the ship onto each other. In other words, this situation will lead to irresponsibility.

Last year the Transflot service completed its 25th year. Therefore, a well-defined and energetic structure has formed in the sector, a change in which, including the transfer of the services to the ports—would be a return to the old way, a step backward. The main factor in this problem is the fact that the seamen want to know a single agent, a single responsible entity.

It can be stated today with certainty that the Transflot service, created in 1963, is this precise entity—a multi-specialized organization, the services of which are used by the ships of the Ministry of the Maritime Fleet and other departments, as well as by seamen and members of their families, an organ coordinating and controlling the actions of other shore subdivisions, including the ports participating in the KOF.

[Kontseladov] All the same, Boris Aleksandrovich, are the expenditures of time and funds to perform auxiliary operations not growing? How is this explained?

[Tsirulnikov] The main reason is the growth of the volume and labor-intensiveness of work and services offered to the fleet.

An analysis of the gross lay days for ships shows that cargo work and auxiliary operations and service to ships in port are equal with respect to labor-intensiveness. For example, in processing large-tonnage ships the port spends up to 7,000 man-hours and 500 machine-hours of transport means for cargo work and just as much to

prepare the ships for a run when drawing in the services of the MTS [Ministry of Transport Construction], Tormortrans, the industrial combine, the ERNK and other enterprises and operations. All this is because of the fact that the material-technical base of the shore subdivisions is insufficiently developed: there is a critical shortage of motor vehicle transport, bunkering, supply ships, harbor passenger launches; capacities of the BTOF and other facilities for social and cultural-everyday purposes are inadequate.

Taking this circumstance into consideration, I feel that the sectorial KOF system should have, in each shipping company, its own long-term program of measures to reinforce the material base and improve the comprehensive service to the ships and their crews in the period to the year 2000.

[Kontseladov] What measures, in your opinion, will be most effective in improving KOF?

[Tsirulnikov] So far, the shipping companies and Transflot services have been doing a poor job of seeking them. Improving the mechanism of cost accounting should specify the transition of services to both internal and full cost accounting. They will be based on concluding direct contracts with local organizations and enterprises, including cooperatives, for the performance of various operations and services for the fleet, using reciprocal economic sanctions (fines and bonuses) for prompt, complete and high-quality satisfaction of requisitions from ships and their crews among the enterprises participating in the service.

The practical work of making the transition to these economic contractual relations is already taking place in the Black Sea Shipping Company, the Latvian Shipping Company, the Azov Shipping Company and the Far East Shipping Company. For example, the Ilichevsk branch of the Transflot service for the Black Sea Shipping Company concluded contracts with a motor vehicle cooperative on the basis of the individual work activity for service to seamen, and the Berdyansk branch of the Transflot service of the Azov Shipping Company, working on the same basis with the Trade-Industrial Bureau, reduced the staff of its own talley-men and thus reduced the commercial losses. Now experts of the Trade-Industrial Bureau are implementing reception and turnover of cargoes on behalf of the ship. These innovations merit attention and further dissemination.

Nevertheless, a general transition to new forms of economic activity is impossible today due to the absence, so far, of a normative base for KOF—rates and prices for the work and services performed. A paradoxical situation has formed, in which some of the services, including those of a personal nature (acquiring tickets, mail items, various purchases for seamen and their families, etc.), are fulfilled by Transflot, generally without charge. Whether it renders more or fewer of these services is in no way reflected in the financial result. The existing rates grew obsolete long ago and do not correspond to the

actual labor expenditures. Even the miserly agency remuneration, established at one time from the dead-weight tonnage of the ship, and the services of individual shipping companies, are shared half-and-half with the ports. After all, the official list of services rendered to the fleet has increased to 200-250 types and it will probably be complicated to work out a price list for all types. Therefore it is expedient, perhaps, to consider the possibility of Transflot collecting a commission—a calculated percentage of the cost expression of the services offered by various enterprises and organizations.

Improving the economic mechanism of KOF is subject to thorough exposure. There must be a review of the system of document turnover, ensuring that standardized forms for requisitions, contractual and accounting documents, acts, etc. are introduced into practical work; new technological forms of service must be worked out, based on the need to create new or reconstruct the existing technical and transport means; technical requirements for new types of ships providing KOF must be worked out; requirements for the capacities of BTOF,

and normative indicators for all the elements of the material-technical base (motor vehicle transport, service-auxiliary fleet), as well as many other things, must be worked out.

The sectorial scientific research institutes, which still have a very low output in solving this problem, should give serious assistance in forming the normative base and the economic mechanism of KOF.

Therefore, at this stage, the primary and urgent task must be to form a program of scientific research work for scientific provision of KOF for the long term, with stagewise introduction of developments for the practical work of KOF.

In conclusion, I consider it possible to express one more idea: the Transflot services should in the near future become independent cost accounting organizations, but under the aegis of the shipping companies. The prerequisites for this exist today.

22161

187

NTIS

ATTN: PROCESS 103

5285 PORT ROYAL RD

SPRINGFIELD, VA

22161

This is a U.S. Government publication. Its contents in no way represent the policies, views, or attitudes of the U.S. Government. Users of this publication may cite FBIS or JPRS provided they do so in a manner clearly identifying them as the secondary source.

Foreign Broadcast Information Service (FBIS) and Joint Publications Research Service (JPRS) publications contain political, economic, military, and sociological news, commentary, and other information, as well as scientific and technical data and reports. All information has been obtained from foreign radio and television broadcasts, news agency transmissions, newspapers, books, and periodicals. Items generally are processed from the first or best available source; it should not be inferred that they have been disseminated only in the medium, in the language, or to the area indicated. Items from foreign language sources are translated; those from English-language sources are transcribed, with personal and place names rendered in accordance with FBIS transliteration style.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by FBIS/JPRS. Processing indicators such as [Text] or [Excerpts] in the first line of each item indicate how the information was processed from the original. Unfamiliar names rendered phonetically are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear from the original source but have been supplied as appropriate to the context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by the source. Passages in boldface or italics are as published.

SUBSCRIPTION/PROCUREMENT INFORMATION

The FBIS DAILY REPORT contains current news and information and is published Monday through Friday in eight volumes: China, East Europe, Soviet Union, East Asia, Near East & South Asia, Sub-Saharan Africa, Latin America, and West Europe. Supplements to the DAILY REPORTs may also be available periodically and will be distributed to regular DAILY REPORT subscribers. JPRS publications, which include approximately 50 regional, worldwide, and topical reports, generally contain less time-sensitive information and are published periodically.

Current DAILY REPORTs and JPRS publications are listed in *Government Reports Announcements* issued semimonthly by the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia 22161 and the *Monthly Catalog of U.S. Government Publications* issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

The public may subscribe to either hardcover or microfiche versions of the DAILY REPORTs and JPRS publications through NTIS at the above address or by calling (703) 487-4630. Subscription rates will be

provided by NTIS upon request. Subscriptions are available outside the United States from NTIS or appointed foreign dealers. New subscribers should expect a 30-day delay in receipt of the first issue.

U.S. Government offices may obtain subscriptions to the DAILY REPORTs or JPRS publications (hardcover or microfiche) at no charge through their sponsoring organizations. For additional information or assistance, call FBIS, (202) 338-6735, or write to P.O. Box 2604, Washington, D.C. 20013. Department of Defense consumers are required to submit requests through appropriate command validation channels to DIA, RTS-2C, Washington, D.C. 20301. (Telephone: (202) 373-3771, Autovon: 243-3771.)

Back issues or single copies of the DAILY REPORTs and JPRS publications are not available. Both the DAILY REPORTs and the JPRS publications are on file for public reference at the Library of Congress and at many Federal Depository Libraries. Reference copies may also be seen at many public and university libraries throughout the United States.